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NAVAL POSTGRADUATE SCHOOL

Monterey, California



THESIS

A RISK MANAGEMENT MODEL FOR THE FEDERAL ACQUISITION PROCESS

James P. Ross

June 1999

Principal Advisor:

David A. Smith

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**A RISK MANAGEMENT MODEL FOR THE
FEDERAL ACQUISITION PROCESS**

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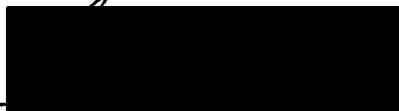
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ABSTRACT

The Federal Acquisition Process is the process used by the Federal Government to purchase needed goods and services. The process consists of the presolicitation phase, solicitation-award phase, and the post-award administration phase. The Government Contracting Officer (CO) is responsible for conducting 78 key tasks within the acquisition process. Each task is laden with many potential risks, such as a risk of overrunning costs, possible delivery and schedule delays, receiving a product of poor quality, problems with the selected contractor, disputes, and protests.

This thesis investigates risk management in the acquisition process. This research explains the Federal Acquisition Process and each of the 78 tasks to be completed by the CO, and examines the concepts of risk and risk management. This research culminates in the development of a model that identifies prevalent risks in the acquisition process, lists corresponding consequences, and recommends applicable risk treatments. A questionnaire of knowledgeable, experienced contracting professionals is used to gather opinions, ideas, and practical applications of risk management in the acquisition process, and refine the model. This thesis concludes with recommendations for effective risk management in the acquisition process.

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I. INTRODUCTION

A. PURPOSE

Risk is a difficult term to define; the word conjures up many different meanings to many different people. The Federal Acquisition Process presents an interesting perspective in terms of risk. The process consists of three main phases: pre-solicitation, solicitation-award, and post-award administration. Depending on which phase of the process one is working in, and even which task one is performing within that phase, a different risk, or combination of risks, may be present. Even if all of the risks can be identified, the ways of managing them are many.

The purpose of this research is to analyze risk within the Federal Acquisition Process in order to develop a model of risk management for the procurement specialist. This thesis examines the Federal Acquisition Process and the main tasks of procurement personnel within the process. Through a comprehensive literature review and information gathered from a survey of senior procurement personnel within varying purchasing commands in the Department of Defense (DoD) and academic professionals in the procurement arena, a model of risk within the acquisition process is developed in order to aid contracting personnel in their procurement function.

B. BACKGROUND

Within the procurement process, one of the main risk management techniques employed is selection of contract type. Through a carefully selected risk sharing arrangement, much of the risk of rising, uncontrollable costs on a contract can be managed. Often it seems this risk of rising costs is the only one clearly identified and

definitized. Other areas of risk such as schedule, risk of protest, contractor performance, and receiving the right product or service are not as easily quantified or as effectively definitized.

Government contracting professionals and workers have long been labeled "risk avoiders" and not "risk takers." (Shapira, 1995, p. 76) For years the contracting community has labored in an atmosphere that preferred risk aversion to careful risk management and timely decision making. (Doyle, 1999, p. 42) Current acquisition reforms suggest new ways of doing business and thinking "out of the box." (FASA, 1994) Implied in this new way of doing business is the fact that more risks may arise and those risks must be managed, not avoided. This requires a clear understanding of risk and identification of primary and secondary risk areas. Risk identification must be considered early and as the process evolves (Ansell, 1992, p. 53). Of course, contingency measures must always be present, but should not become the normal operation. Risk is present in every aspect of the contracting process, and every procurement is riddled with potential risk areas. The contracting professional who has a clear understanding of risk from the beginning, and what can be done to manage these risks to aid a smooth procurement process, will be a valuable asset.

While there are significant volumes of research concerning risk and risk responses, the psychology of the individual making the risk decision and the organizational environment are also major factors. The problem is that aside from selection of contract type and incorporation of a myriad of contractual clauses, the contract manager has little in the way of formal risk management guidance. This suggests the need for a

risk management model that can be used to guide contract managers and help them strike a prudent business balance between the costs and benefits of various risk management approaches.

C. RESEARCH OBJECTIVE

The objective of this thesis is to identify and examine risk in the Federal Acquisition Process. The goal of this study is to produce a risk model for procurement personnel in order to assist them in planning for and operating in the procurement process more effectively. This will enable contracting personnel to better identify risk areas in their particular procurement program from the very beginning and it may aid in lowering overall program costs, developing more realistic schedules, selecting the best contractor for each requirement, and most importantly, obtaining the best overall value for the Government.

This research serves as a comprehensive study of risk in the entire procurement process. Its primary benefit is to identify risk areas for consideration early in the process, when procurement personnel have the greatest ability to take proactive steps in mitigating their effects. Being reactive to problems later in the process can severely jeopardize a program. Detailed knowledge of procurement risks enhances the ability of contracting personnel to make the best procurement decisions.

D. RESEARCH QUESTIONS

A. Primary Research Question

What model or framework can be developed and used to clarify, analyze, and manage prevalent risks associated with Federal contracting?

2. Subsidiary Research Questions

- What is risk, and how can risk management be defined in terms of identification, assessment, and mitigation techniques available?
- How does the Federal Acquisition Process operate and how can risk management be modeled and applied to the contracting process?
- What risks are most prevalent across the spectrum of the Federal Acquisition Process?
- How do contracting professionals manage risk in the conduct of their professional duties?
- How can contracting risk management be improved through the use of a model?

E. SCOPE

This thesis is intended to assess key areas of risk in the acquisition process and identify risk treatments for these areas. It is also intended to compare ideas from senior procurement personnel in DoD and academia to information gathered during the literature review. It is not intended to identify each and every risk in the process or assess risk management practices in any particular Government agency, institution, or DoD command.

F. METHODOLOGY

This thesis is a study of risk management in the Federal contracting system. It includes a general description of the Federal Acquisition Process, the concept of risk, and risk management techniques and practices. The Federal Acquisition Process framework of the 78 key tasks of contracting personnel are used as the guide for identifying risk areas and possible risk treatments (FAP, n.d., p. 5-8). This thesis first presents a

comprehensive literature review of books, magazine articles, computer and Internet sources, and other information sources. Surveys and interviews are conducted with senior procurement personnel in DoD regarding risk in the acquisition process, and compared to information gathered during the literature review. The information gathered is reviewed and integrated into a general risk management model for the Federal Acquisition Process that will serve as a risk management guide for contracting personnel.

G. ORGANIZATION OF STUDY

Following this introductory chapter, Chapter II provides background information on the Federal Acquisition Process. It examines the three main phases and the 78 tasks required of procurement personnel within the process. It also provides information regarding risk, risk identification, risk assessment, and risk responses that support a risk management plan. Chapter III examines risk in the Federal Acquisition Process. Through use of a matrix format, risks are identified, possible consequences listed, and likely treatments developed. A preliminary risk model is proposed. Chapter IV details the results of a survey concerning practical risk perspectives and actions by actual contracting professionals at DoD buying offices. This information is compared and contrasted to the preliminary model. Chapter V includes the conclusions and recommendations of the thesis. It answers the research questions and addresses areas for additional research.

II. BACKGROUND

A. INTRODUCTION

This chapter provides background information on the Federal Acquisition Process. It examines the three main phases and the 78 tasks required of procurement personnel within the process. These are taken directly from the Federal Acquisition Process guidebook (FAP, n.d., p. 5-8). The first 74 tasks are required for all contracts. The last four tasks are completed only as required since they concern modifications, terminations, and claims. This chapter also provides information regarding risk, risk identification, risk assessment, and risk responses within the scope of risk management.

It is important to establish the format on which this study is based. By using the acquisition process model, a framework of study is already established to further explore risk areas. All U.S. Government procurement personnel are familiar with this framework as a baseline of contracting requirements. This makes identification of risks, their possible consequences, and applicable risk treatments much easier for procurement personnel to understand and relate to. The first task is to understand the acquisition process.

B. THE FEDERAL ACQUISITION PROCESS

The Federal Acquisition Process is a three-phased approach used by the Federal Government to acquire needed goods and services. It consists of a pre-solicitation phase (also called pre-award and procurement planning phase), a solicitation-award phase (also called contract formation phase), and a post-award administration phase (also called contract administration phase). These three phases are further broken into specific

functions and discussed below. A graphical representation of the Federal Acquisition Process is presented in Figure 1.

PRESOLICITATION PHASE

Determination of Need	Initiating the Procurement	Analysis of Requirement	Sourcing
Determining Needs	Processing the PR	Analyzing Requirements	Extent of Competition
1. Forecasting Requirements	3. Purchase Requests	6. Specifications	9. Sources
2. Acquisition Planning	4. Funding	7. Statements of Work	10. Set Asides
	Market Research	8. Services	11. 8(a) Procurements
	5. Market Research		12. Competition Requirements
			13. Unsolicited Proposals
			Selection Factors
			14. Lease vs. Purchase
			15. Price Related Factors
			16. Technical Evaluation Factors
			Method and Plan for the Procurement
			17. Method of Procurement
			18. Procurement Planning

Source: (FAP, n.d., p. 5-8).

Figure 1. Federal Acquisition Process

SOLICITATION-AWARD PHASE

Solicitation	Evaluation- Sealed Bidding	Evaluation- Negotiation	Award
Terms and Conditions	Bid Evaluation	Proposal Evaluation	Selection for Award
19. Contract Types	30. Processing Bids	35. Processing Proposals	46. Mistakes in Offers
20. Letter Contracts	31. Bid Acceptance Periods	36. Technical Evaluation	47. Responsibility
21. Contract Financing	32. Late Offers	37. Price Objectives	48. Subcontracting Responsibilities
22. Use of Government Property and Supply Sources	33. Bid Prices	38. Cost and Pricing Data	49. Preparing Awards
23. Need for Bonds	34. Responsiveness	39. Audits	Executing Awards
24. Solicitation Preparation		40. Cost Analysis	50. Award
Soliciting Offers		41. Evaluating Other Terms and Conditions	51. Debriefing
25. Publicizing Proposed Procurements		42. Competitive Range	Protests
26. Preaward Inquiries		Discussions	52. Protests
27. Prebid/Preproposal Conferences		43. Factfinding	Fraud and Exclusion
28. Amending Solicitations		44. Negotiation Strategy	53. Fraud and Exclusion
29. Canceling Solicitations		45. Conducting Negotiations	

Figure 1 (Continued)

POST-AWARD ADMINISTRATION PHASE

Start-Up	Quality Assurance	Payment and Accounting	Closeout
Planning 54. Contract Administration Planning 55. Post-Award Orientations Ordering 56. Ordering Against Contracts and Agreements Subcontracting 57. Consent to Subcontracts	Monitoring and Problem Solving 58. Monitoring, Inspection, and Acceptance 59. Delays 60. Stop Work 61. Remedies Property 62. Property Administration Reporting Performance Problems 63. Reporting Performance Problems	Payment 64. Limitation of Costs 65. Payment 66. Unallowable Costs 67. Assignment of Claims 68. Collecting Contractor Debts 69. Progress Payments 70. Price and Fee Adjustments Accounting 71. Accounting and Cost Estimating Systems 72. Cost Accounting Standards 73. Defective Pricing	Closeout 74. Closeout

Figure 1 (Continued)

POST-AWARD ADMINISTRATION PHASE (Continued)

Contract Modification	Termination	Claims	
Modifications/Options	Termination	Claims	
75. Contract Modifications	76. Termination 77. Bonds	78. Claims	

Source: (FAP, n.d., p. 5-9).

Figure 1 (Continued)

The goals of the process are to satisfy customer requirements through marketplaces for supplies and services, and meet expectations in terms of quality, timeliness, and cost while minimizing business and technical risks. It also seeks to accomplish socioeconomic objectives, maximize competition, and maintain process integrity (FAP, n.d., p. 5-6). In all, it ensures purchased supplies and services are delivered or performed when and where specified in the contract, acceptable in terms of conforming to the contract's specifications or statement of work, and furnished in compliance with other terms and conditions of the contract (FAP, n.d., p. 5-6). Acquisition does not represent a solitary activity; rather it involves the interaction between a procuring organization and one or more contractors submitting proposals and

supplying goods and services (Nissen, 1997, p. 98). Each phase of the Federal Acquisition Process is described in turn.

1. Presolicitation Phase

The purpose of the presolicitation phase is to decide whether to contract for the requirement and, if that is the decision, lay the groundwork for soliciting and awarding the contract (FAP, n.d., p. 5-3). It focuses on seeking the best alternatives to the specified need and carefully initiating the acquisition in terms of activities such as approvals, funding, and market information. The requirement must be clearly specified and possible sources identified so that the groundwork for the acquisition strategy, e.g. what type of procurement (sealed bidding or negotiations) is developed. There are four key functions in this phase.

Functions of the Presolicitation Phase:

1. Determination of Need.
2. Initiating the Procurement.
3. Analysis of Requirement.
4. Sourcing.

a. Determination of Need

A requirement may be defined as a determination within an agency that a need exists that must be satisfied (Arnavas, 1994, p. 2-15). This function effectively validates that a requirement is actually needed, and that need cannot be satisfied by internal means, such as modifications to existing systems or a change to current doctrine or training. This includes forecasting requirements in advance based on estimates of

future threats and available technology. It also includes preparation of the acquisition plan of how the acquisition of the required system or service will be done.

One of the key responsibilities of contracting personnel in larger acquisitions (higher dollar amount) is to aid the program manager in developing an acquisition plan, and from that an acquisition strategy. The acquisition plan serves as the key document for establishing initial criteria and thresholds in order to obtain the needed product or service. The acquisition strategy establishes the framework within which detailed acquisition planning and program execution are accomplished. The Operational Requirements Document (ORD) describes what we need to buy; the acquisition strategy describes how we will buy it (DAD, 1998). The contracting personnel's responsibility during this phase is to help customers develop realistic program plans, schedules, and budgets and recommend long-range strategies for reducing the resources and time required for mission accomplishment.

The acquisition strategy includes the critical events that govern the management of the program. The event-driven acquisition strategy explicitly links program decisions to demonstrated accomplishments in development, testing, initial production, and life-cycle support (DOD 5000.2R, 1998, p. 4). This important task is begun during the presolicitation phase, and is often the key responsibility of the contracting element.

These steps are similar for smaller purchases and acquisitions as well. Although the dollar amount, and associated executive visibility may be less, the identification and understanding of the requirement is necessary to continue through the

process. Regardless of the dollar amount or program size, the determination of need function gets the entire process moving.

b. Initiating the Procurement

The first step in actually satisfying the requirement involves approval or authority to process a Government requirement. Once a procurement has been approved, and the need validated, the necessary funds must be committed. The document setting forth the requirement (and citing the appropriated funds) is generally called a purchase request (PR) (Arnavas, 1994, p. 2-16). The PR contains the following minimum information:

- Description of the desired supplies or services,
- Desired contract award date and delivery date,
- Recommended sources, if known,
- Shipping, marking, and packing information, and
- To the extent appropriate, any other pertinent information such as special terms and conditions desired or required by the contract.

In order to determine possible sources in the marketplace that can satisfy the requirement, an action called market research takes place. Market research is the action taken to improve a purchasing organization's understanding of the market from which it procures supplies (Hearn, 1996, p. 22). Market research is essential to optimize the potential use of commercial items, commercial services, and nondevelopmental items (NDI) to meet agency needs (SD-5, 1992, p. 1). Market research involves analyzing the commercial market for ways to shape the acquisition in order to obtain the best overall

value. Market research is an iterative process done throughout acquisition process, but done early can help to shape the acquisition strategy, support and test plans, product description, statement of work, evaluation factors, and contract terms and conditions (SD-5, 1992, p. 3). Most importantly, market research can aid in the completion of many of the 18 tasks in the presolicitation phase.

Market research helps to shape the entire acquisition by analyzing the extent of competition in the marketplace concerning potential sources for the needed product or service. There are many potential sources of market data including technical personnel, procurement histories, catalogs, trade associations, and Government and non-Government databases (FAP, n.d., p. 6-15).

c. Analysis of Requirement

This function involves clearly defining the requirement in terms of describing the work required to satisfy it. The type of specification may be in terms of functions to be performed (functional), performance required (performance), or essential physical characteristics (design) (Cibinic, 1997, p. 349). Specifications should state minimum needs and avoid stating unnecessary requirements which could increase production time and cost. These specifications have a direct impact on creation of the Statement of Work (SOW) (Cibinic, 1997, p. 351).

The SOW describes the contract work to be performed and incorporates any applicable specifications. Items such as a general scope of work, contractor tasks, data requirements, and Government Furnished Property (GFP), facilities, equipment, and services available (FAP, n.d., p. 6-22). Use of a Statement of Objectives (SOO) may also be possible, especially when the requirement involves new technology (SOW, 1991, p.

25). A SOO states top-level objectives of the requirement, rather than specifically stating step by step what will be needed. It is intended to give potential contractors more flexibility and encourage innovation in developing solutions to meet the requirement.

The final requirement of this function involves requirements for services. Service contracts are awarded for the performance of an identifiable task, rather than for furnishing an end item of supply (FAP, n.d., p. 6-23). This includes determining whether the requirement will be for personal or nonpersonal services. Personal services are when contractor personnel are, or appear to be treated as, Government personnel. Nonpersonal services are when they are not under Government supervision or control. Agencies may not award personal service contracts unless contracting for such services is specifically authorized by statute. Nonpersonal service contracts are very common, such as housekeeping and base services, communication services, and maintenance, overhaul, and repair services (FAP, n.d., p. 6-24).

d. Sourcing

The majority of tasks accomplished during the presolicitation phase are conducted in this function. The extent of competition can effect the future procurement in terms of method of procurement, contract type, and future costs. There are certain laws in procurement that require the Government to use specific sources or groups of sources to satisfy a requirement, in order to promote socioeconomic programs. These include certain required sources for certain supplies and services such as public utility services, printing, automatic data processing and telecommunications, and leased motor vehicles. Some examples are the Federal Prison Industries, the Committee for Purchase

from the Blind, and the Defense Logistics Agency (FAP, n.d., p. 6-29). The Buy American Act establishes the requirement that acquisitions for public use be for materials, supplies, or articles substantially composed of domestic products (Arnavas, 1994, p. 6-17).

A set-aside is an acquisition reserved exclusively for small businesses and/or businesses in labor surplus areas. A small business is one that is (1) independently owned and operated and (2) does not dominate the field in which it is bidding (FAP, n.d., p. 6-30). A small disadvantaged business is one that meets the above two requirements in addition to being at least 51% unconditionally owned, or having at least 51% of its stock unconditionally owned by one or more individuals who are both socially and economically disadvantaged. The Small Business Administration (SBA) establishes size standards on an industry by industry basis and oversees all small and disadvantaged businesses wishing to compete for Government contracts.

Section 8(a) of the Small Business Act of 1953 authorizes the SBA to serve as a prime contractor and subcontract with small disadvantaged businesses (FAP, n.d., p. 6-33). This allows firms an opportunity to develop into experienced, strong competitors for future contracts. An 8(a) contract may not be awarded if the price of the contract exceeds a fair market price.

Full and open competition is required under the Competition in Contracting Act (CICA) of 1984. Full and open competition means that all responsible sources are permitted to compete. There are seven circumstances in which full and open competition may be waived (FAP, n.d., p. 6-35). These are:

1. Only one responsible source;
2. Unusual and compelling urgency;
3. Industrial mobilization;
4. International agreements;
5. Authorized or required by statute, e.g., 8(a) contracts;
6. National Security as determined by the Secretary of Defense;
7. When determined, by agency head, to not be in the public interest.

The final requirement concerns unsolicited proposals. An unsolicited proposal is a written proposal that is submitted to an agency on the initiative of the submitter for the purpose of obtaining a contract with the Government and which is not in response to a formal or informal request (FAP, n.d., p. 6-36). If the unsolicited proposal is favorably evaluated it still must be competed fully and openly unless one of the exceptions above applies.

There are several selection factors to be considered in forming a basis for selecting the best offer. Price or cost to the Government is a mandatory factor in source selections. Another factor is that of lease versus purchase options. This is decided on a case by case basis dependent on many factors such as obsolescence, immediacy of need, funding ability, and strategic importance.

Other factors to be considered in the sourcing function include consideration of price related factors such as transportation costs, expected energy costs, applicable taxes, and possible tariffs that may apply. Technical evaluation factors, or non-price related factors must also be evaluated. These may be the offeror's technical

approach or methodology, qualifications of key personnel, and past performance (FAP, n.d., p. 6-40).

It is important to note that the sourcing function and its required factors are only identifying areas to be included in future invitations for bid (IFB) or requests for proposal (RFP), not exactly how they will be evaluated. This is done in a later phase. Following consideration of the extent of competition and selection factors, the method and plan of procurement can be analyzed.

There are three main methods of procurement, simplified acquisition procedures (SAP), sealed bidding, and competitive negotiation. SAP procurements are used for the acquisition of supplies, nonpersonal services, and construction when the aggregate amount does not exceed \$100,000. These include micropurchases of \$2500 and under using the Government credit card, purchase orders, and blanket purchase agreements (BPA) (FAP, n.d., p. 6-42). SAP are especially useful for fulfilling small, repetitive needs from the local marketplace: office supplies, automotive parts, and services, etc. (FAP, n.d., p. 6-43)

The sealed-bidding method is generally used for the acquisition of supplies or services that can be precisely described and competed only on the basis of price and price related factors (FAP, n.d., p. 6-44). No discussions with offerors are required or permitted. An (IFB) is used to solicit offers in sealed bidding. The items in the IFB must be sufficiently clear and at least two offerors willing to compete must be present (FAP, n.d., p. 6-44). Under sealed-bidding only two types of contracts may be awarded: firm-fixed-price (FFP) or fixed-price with economic price adjustment (FPEPA).

In contrast to sealed-bidding, acquisition by competitive negotiation means contracting through the use of either competitive or other than competitive proposals and discussions between the Contracting Officer (CO) and the offerors (Hearn, 1996, p. 58). An (RFP) is used to solicit offers in competitively negotiated contracts. Award under the competitive negotiation process will be to the offeror presenting the best value offer to the Government, which may or may not always be the lowest price. Any contract type may be awarded under competitive negotiation.

The final task of the sourcing function is procurement planning or in more complex procurements, acquisition planning. Usually a written procurement plan is developed for complex requirements (FAP, n.d., p. 6-46). This plan is a compilation of many of the tasks completed during the presolicitation phase. Some elements of this plan include the PR, decisions on the extent of competition, decisions on selection factors, decisions on the method of procurement, possible contract type, and preliminary plans for administering the contract (FAP, n.d., p. 6-47).

2. Solicitation-Award Phase

The purpose of the solicitation-award phase is to solicit offers, evaluate offers, and award the contract. In this phase decisions are made regarding the type of contract to be used, how offerors will be evaluated, and what constitutes a best value procurement. The solicitation-award phase consists of three functions (FAP, n.d., p. 71).

Functions of the Solicitation-Award Phase:

1. Solicitation.
2. Evaluation (under either sealed bidding or competitive negotiation).
3. Award.

a. Solicitation

The solicitation consists of a draft contract and solicitation provisions instructing offerors how to prepare and submit offers. They also describe the evaluation process and the offeror's right to protest (FAP, n.d., p. 7-3). Selecting the terms and conditions for the solicitation and the method of soliciting offers constitute this function. This includes use of either the IFB or RFP depending on which method of procurement is to be used. From this follows selection of the contract type. The selection of contract type is the principal method of allocating risk between the Government and contractor (CPRG, 1996, p. 1-4). The elements of that risk will be identified later in this chapter, but it is important to note that no single contract type is absolutely correct for every situation. Factors such as the complexity and maturity of the product or technology, extent of competition, urgency of the requirement, and uncertainty in estimating costs all bear on the decision of which type of contract to choose (FAP, n.d., p. 7-5). The two main types of contracts are fixed-price and cost-reimbursement.

Under a fixed-price contract, the contractor agrees to deliver a required product or service at an agreed total price. Fixed-price contracts are mostly used in contracts of a lower perceived cost risk involving mature products that have been widely produced in the past. They place the maximum risk on the contractor (while also promising the greatest potential for profit) and impose the minimum administrative burden on the Government (Arnavas, 1994, p. 4-17).

Cost-reimbursement type contracts are used when the uncertainty involved in contract performance are of such magnitude that the cost of performance cannot be

estimated with sufficient reasonableness to permit use of any type of fixed-price contract (Arnavas, 1994, p. 4-18). This type of contract substantially increases the Government's administrative costs and places little-if any-cost risk on the contractor (Arnavas, 1994, p. 4-19). The Government's cost risk is limited by use of a ceiling on costs. The contractor, under a cost-reimbursement contract, is only required to put forth their best effort and is normally permitted to stop performance if the Government does not agree to allow them to exceed the total estimated cost ceiling established when work was commenced (Arnavas, 1994, p. 4-19).

Letter contracts are written preliminary contractual instruments that authorize the contractor to begin work immediately (FAP, n.d., p. 7-9). A letter contract must be definitized within 180 days from start of work. In effect, a letter contract is really no contract at all, just a notice to begin work and that a contract is forthcoming.

Contractor financing refers to payments made to a contractor before supplies have been delivered or services rendered. Two basic types of financing are available when contracting for commercial items: commercial advance payments, which are made before performance of any work, and commercial interim payments which are made at specified times after work has begun (FAP, n.d., p. 7-10). For non-commercial contracts, customary progress payments are made under a fixed-price contract on the basis of costs incurred or on physical progress (FAP, n.d., p. 7-12). Performance based payments may also be used. These are based on performance measured by objective, quantifiable methods; accomplishment of defined events; or other quantifiable measures or results (FAP, n.d., p. 7-12).

Contractors are ordinarily expected to furnish all property necessary to perform the work of the contract (FAP, n.d., p. 7-13). Sometimes, however, the Government, in its own best interest, may provide the contractor with GFP. This may be necessary due to the Government being the only source of special tooling needed, or special test equipment required by the contractor (Arnavas, 1994, p. 9-2). The Government must provide the GFP, if required in the contract, in a timely manner for the contractor to begin work. It must also ensure the GFP is suitable for use by the contractor when delivered (Arnavas, 1994, p. 9-13).

Once the issues of contract type and possible use of GFP are resolved the contracting professional must assemble the solicitation of offers into an IFB or RFP, depending on the method of procurement. The solicitation must include the contract schedule, i.e. the requirement, contract clauses, list of documents and attachments, and representations and instructions, i.e. solicitation provisions (FAP, n.d., p. 7-16). Each solicitation should be tailored to the specific acquisition. Tailoring is one of the six themes of the DoD 5000.1. It states that the Milestone Decision Authority, the individual overseeing the entire acquisition,

should strive to tailor most aspects of the acquisition process, including program documentation, acquisition phases, and the timing, scope, and level of decision reviews. From a management standpoint there is no reason to expect to treat every program identically. (DoD 5001.ES, 1998, p. 2)

The law requires proposed contract actions to be publicized prior to issuance of the solicitation in order to increase competition, broaden industry participation in meeting Government requirements, and assist small, and small-

disadvantaged business concerns in obtaining contracts and subcontracts (FAP, n.d., p. 7-21). The most common way of publicizing the solicitation synopsis is through the Commerce Business Daily (CBD). Generally the synopsis must appear in the CBD at least 15 days prior to release of the solicitation to potential offerors (FAP, n.d., p. 7-21). CBD synopses are only required for contract actions expected to be in excess of \$25,000. Certain exemptions apply such as a classified requirement, and an urgent requirement in which time is of the essence. Other methods of publicizing include designated bulletin boards, local trade publications, electronic bulletin boards, and mailing flyers to potential offerors listed on the Bidder's Mailing List maintained by the local contracting office (FAP, n.d., p. 7-22).

Certain preaward and prebid/proposal activities may also take place. Preaward inquiries are questions and corresponding comments for prospective offerors concerning the clarity and completeness of specifications, terms, and conditions in the solicitation. A prebid/proposal conference is a meeting held before bid opening or before the closing date for submissions in order to provide offerors an inspection of the work site, explain complicated specifications and revisions, and address inquiries at once where all are present in order to sustain fairness (FAP, n.d., p. 7-24).

It may be determined following an internal review or from preaward activities that an amendment to the solicitation is required. This is done to change quantity requirements, specifications, delivery requirements, the due date of offers, or to correct ambiguous or defective wording in the solicitation. It is not used for major scope changes in which an entirely new solicitation would be appropriate (FAP, n.d., p. 7-25). In sealed bidding, all offerors who received an IFB must receive the amendment. If an

RFP was issued, release of the amendment to offerors depends on how far along the procurement is, i.e. before closing date, after closing date, or after competitive range determination. A solicitation is cancelled only if the requirement no longer exists, and funds are no longer available and is done in accordance with FAR Parts 14 and 15.

b. Evaluation-Sealed Bidding

There are strict rules concerning the administrative requirements of the sealed-bidding process. The basic sealed-bidding process involves the Government publishing an IFB for a needed product or service, requiring bids to be submitted by a specific date. Offerors submit their bids under the Firm-Bid Rule; this means that no adjustments may be made to offers following submission. At a specified time, all bids are publicly opened and evaluated for completeness. Award is made to the lowest priced bidder, deemed to be responsive and responsible (FAP, n.d., p. 7-31).

c. Evaluation-Competitive Negotiation

The competitively negotiated acquisition begins with the Government publication of an RFP detailing the specific requirements of the needed product or service and those of the submitted proposal. Within the RFP are specific guidelines concerning not only the contract requirements but also how proposals will be evaluated (Arnavas, 1994, p. 4-7).

The evaluation factors used depend on the particular circumstances. Evaluation factors, especially for procurements involving research and development, fall into three major categories: technical, management, and cost (Arnavas, 1994, p. 4-6). A technical evaluation may be used to ensure an understanding of the requirement, and a

management analysis may be used to evaluate the offeror's ability to effectively oversee progress of work. It is now a requirement that an offeror's past performance is always considered as an evaluation factor.

A price evaluation of the proposal must always be done in order to determine if its price is fair and reasonable, or what a prudent businessperson would expect to pay in the competitive market for a good or service of like type, quality, and quantity (FAP, n.d., p. 7-39). This may not always be possible if no such items exists in the marketplace. In that case a cost analysis must be done in determining whether a proposed cost is realistic and allowable according to the Federal Acquisition Regulation (FAR) Part 31.

The Government may also require cost or pricing data in which the contractor must disclose their costs and subsequent pricing data on all aspects of their proposal as current, accurate, and complete (Arnavas, 1994, p. 5-35). This can be very time consuming to contractors and is only required for contracts in excess of \$500,000 (FAP, n.d., p. 7-41). Certain exemptions apply such as if there is an established catalog or market price, a price set by law or regulation, or a commercial item (Arnavas, 1994, p. 5-30).

In order to conduct worthwhile discussions, it may be necessary for the Government to conduct fact-finding. This is the process of identifying and obtaining information necessary to complete the evaluation of proposals through plant visits, telephone calls, and conferences. Factfinding allows the contracting professional to revise negotiation objectives or even eliminate an offeror from the competitive range. A

negotiation strategy is wholly dependent on the goals of the particular organization and information gathered to that point. In the conduct of negotiations, the goal is to obtain agreement on the terms and conditions of a contract for a needed requirement that are mutually acceptable. However, there is no requirement for agreement if terms are not acceptable to one or both parties. True negotiation includes bargaining and give and take by both parties (FAP, n.d., p. 7-46).

d. Award

Before a contract can be awarded, certain administrative steps must be done. This includes preparing the selection for award. Any mistakes in bids must be clarified. In sealed bidding only obvious clerical or mathematical errors can be corrected. In negotiated procurement, the contracting professional must be careful not to allow offerors to improve their offers in correcting errors that were really misunderstandings of the requirement.

An awardee must also be determined to be responsible. FAR Part 9.104 lists the responsibility standards. These are:

- Adequate financial resources.
- A satisfactory performance record.
- Ability to perform the work/service required by the contract within the required delivery schedule.
- A satisfactory record of integrity and business ethics.
- The necessary organization, experience, accounting and operational controls, and technical skills.

- The necessary production, construction, and technical equipment and facilities.
- Qualified and eligible to receive an award under applicable laws and regulations.
- Any special standards stated in the solicitation. (FAP, n.d., p. 7-52)

It is Government policy that prime contractors provide subcontracting opportunities to small and small-disadvantaged businesses (FAP, n.d., p. 7-53). Contractors must provide subcontracting plans for contracts in excess of \$500,000 (\$1 million for construction). Before awarding the contract, the contracting element must ensure sufficient funds are available for award, all requirements of law have been met, and procedures handled correctly. The final contract is prepared, checked, and signed.

Award is dependent on which method of procurement is used. In sealed bidding, the lowest offeror deemed responsive and responsible will be awarded the contract. In negotiated acquisition, non-price factors may allow award to the offeror whose proposal represents the best value to the Government.

Award may also be made without discussions if the solicitation allowed it, no discussions are held with any offeror, the proposal in line for the award is responsive, and award would be at a fair and reasonable price (FAP, n.d., p. 7-44). The contracting officer will establish a competitive range of proposals that have a reasonable chance of being selected for award. Discussions are then held with those offerors in the competitive range and award is made to the proposal offering the best value.

In negotiated acquisition, offerors are allowed to revise their proposals, usually up to the conclusion of negotiations or at a time specified by the Government.

This often includes use by the Government of a Source Selection Plan (SSP). The SSP delineates how offers will be evaluated and the contract representing the best overall value selected.

Under formal source selection, a Source Selection Evaluation Board (SSEB) evaluates offers against the solicitation. Those that are not responsive or complete are eliminated from the competitive range by the contracting official. Next, offers are forwarded to the Source Selection Advisory Committee (SSAC) that compares proposals against one another. The SSAC forwards one recommendation to the Source Selection Authority (SSA) who chooses the winning offeror (Cibinic, 1993, p. 74). Under informal source selection, a Technical Evaluation Board (TEB) performs the steps of the SSAC and SSEB in selecting the best proposal and forwards their recommendation to the Contracting Officer (CO) for selection.

After a contract is awarded by giving notice, either in writing or by electronic means, to the successful offeror, the agency must notify unsuccessful offerors within three days (Arnavas, 1994, p. 4-22). Offerors may request a debriefing in writing, at which time their significant weaknesses or deficiencies in their proposal are discussed. They can also be told the overall cost and technical rating (negotiation) of the successful offeror, the overall ranking of offerors, a summary of the rationale for award, and any reasonable responses to questions (FAP, n.d., p. 7-56). The debriefing may not include a point by point comparison of the debriefed offeror's proposal with other offers, however, or disclose proprietary or confidential information (Arnavas, 1994, p. 4-22).

An unsuccessful offeror may protest an award if it feels the award was improper, such as award to a nonresponsive or nonresponsible offeror. There are several legal avenues for unsuccessful offerors to protest that are listed in FAR Part 33.1. The impact of the protest varies from delaying award to the successful offeror, to sustaining the protest and negating the award, to awarding to the successful offeror.

The final task of the award function is to ensure there has been no fraud in the process. This task runs throughout the acquisition, but must be complete before award. This fraud may not only involve contractor personnel, but Government personnel as well. Contracting professionals should be aware of fraud indicators such as false invoices, bid rotation or collusion among bidders, and failure to update cost or pricing data upon receiving new information (FAP, n.d., p. 7-58).

3. Post-Award Administration Phase

The third and final phase of the FAP is characterized by seven distinct functions, four of which are required in every contract. The post-award administration phase consists of the following (FAP, n.d., p. 8-1):

Functions of the Post-Award Administration Phase:

1. Start-up.
2. Quality Assurance.
3. Payment and Accounting.
4. Closeout.
5. Contract Modification.*

6. Termination.*

7. Claims.*

*-if required

a. Start-up

The Government and contractor, respectively, plan and initiate performance of the work, called start-up. Start-up includes planning for the administration phase of the contract, placing orders against the contract in the case of basic order agreements or indefinite delivery/indefinite quantity contracts, and consenting, in certain circumstances, to subcontractors (FAP, n.d., p. 8-2). A formal contract administration plan is essential when the contract involves large dollar amounts or complex technical requirements. This plan provides for an appropriate level of surveillance or monitoring of contractor performance, and timely and proper performance of the Government's responsibilities (FAP, n.d., p. 8-4). Some Government agencies provide additional support to the contracting officer in the person of a contracting officer's representative (COR) or contracting officer's technical representative (COTR). Their principal duties involve acting as a liaison between the contractor and Government, providing technical advice and guidance to contractors regarding specifications, purchase descriptions and SOWs, and to provide the contracting officer current contract information (Hearn, 1996, p. 219).

The primary organization responsible for the administration of Government defense contracts is the Defense Contract Management Command (DCMC). Contract administration offices typically employ Administrative Contracting Officers

(ACOs), who are authorized by the CO to perform selected contract administration functions (FAP, n.d., p. 8-5). FAR Part 42.3 lists over sixty functions delegated to ACOs such as reviewing and approving/disapproving contractor's request for payments, performing technical surveillance, and monitoring small business subcontracting plans (FAP, n.d., p. 8-6). An ACO may also conduct a post-award orientation, especially involving complex contracts with small businesses, in order to ensure both parties have a mutual understanding of all requirements, identify any potential problems, to introduce Government representatives to establish a good working relationship (FAP, n.d., p. 8-7).

The Government only has a direct contractual relationship, or privity of contract, with the prime contractor. Since there is no direct relationship between the Government and subcontractors, the Government does not have direct control over the subcontractors, and a subcontractor does not have direct access to the Government. Although there is no direct contractual relationship between the Government and subcontractors, the Government nevertheless exercises considerable control over subcontracts and subcontractors (Arnavas, 1994, p. 22-5). This control is manifested in several notable ways:

- Requirement for Government review of a prime contractor's purchasing system;
- Requirement that the Government consent to certain subcontracts;
- Requirement that many contract clauses in the prime contract be passed on to the subcontractor;
- Government's policy to subcontract with certain groups for socioeconomic reasons; and

- Provisions protecting subcontractors from late payment from prime contractors (Arnavas, 1994, p. 22-5).

b. Quality Assurance

Both parties will implement a quality assurance plan in order to ensure that work satisfies the contract's requirements. This involves inspecting and accepting deliverables, determining the excusability of delays, and invoking formal remedies to bring contract performance back into line (FAP, n.d., p. 8-2). Many of the duties of this function will be included in the contract administration plan. While the Government retains the ultimate right to determine the type and extent of quality assurance, the FAR demonstrates a policy relying on contractors as opposed to the Government; for the inspection of the contract work (Arnavas, 1994, p. 14-2). FAR Part 46 lists specific guidelines regarding inspecting and accepting products from contractors, such as the time, place, and manner of inspection. If a good is found to be unacceptable upon delivery the Government may either reject the nonconforming items or direct the contractor to correct the defect at their cost (Arnavas, 1994, p. 14-9). Certain steps in resolving performance problems, should they arise, are dealt with in FAR Part 12. These include such actions as determining the impact of the problem on cost and delivery, determining whether a delay is excusable or the Government is at fault, and whether the contract may be modified, or as a last resort terminated (FAP, n.d., p. 8-12). If the situation deteriorates to a level so bad that there appears no other solution, the Government may issue a stop work order. The CO may unilaterally issue a stop work

order for 90 days. If problems cannot be resolved the contract may be terminated for default (FAP, n.d., p. 8-14).

In most cases, contractor performance problems can be informally resolved. At other times formal remedies may be needed. Many contract clauses specify remedies available to the Government in resolving problems. Some examples are a liquidated damages clause (i.e., a dollar amount charged for each day deliveries are late or other breaches), issuance of a cure notice which provides the contractor an opportunity to convince the contracting officer that the problem will be cured and termination for default is not necessary, or a show cause notice providing a contractor an opportunity to show cause why the contracting officer should not terminate them for default (FAP, n.d., p. 8-15).

Some contracts impose obligations on the Government regarding the furnishing of GFP. When the Government furnishes the property, the contractor is responsible for inventorying, maintaining, and protecting the property (FAP, n.d., p. 8-16). In addition, the Government at times is entitled to property acquired by the contractor for work on the contract. FAR Part 45 delineates steps to be taken and remedies available in the event a contractor loses or damages GFP, and disposition of GFP following completion of work (FAP, n.d., p. 8-16).

The final task of this function involves describing requirements for documenting past performance. Past performance information is information relevant to future source selections on a contractor's actions under previously awarded contracts. It includes a record of conformance to contract requirements and standards of good

workmanship, a record of forecasting and controlling costs, and adherence to contract schedules (FAP, n.d., p. 8-17). Continual poor past performance or unethical business practices, such as fraud, may result in debarment of a contractor. In that case the contractor would be ineligible for any future Government contracts.

c. Payment and Accounting

The post-award administration phase also encompasses the Government's determination as to the amount of money due the contractor (based on allowable and allocable costs) and payment. This function involves carefully checking invoices and ensuring work completed matches payment requested. The allowability of costs must be determined in a five-part test. This is the reasonableness of the cost, whether it is allocable to the contract, if it is in accordance with the terms and conditions of the contract, if it is consistent with Government Cost Accounting Standards, and whether it is allowable under FAR Part 31 (FAP, n.d., p. 8-24).

Sometimes a contractor may need to borrow money to perform the contract, such as purchasing supplies. The Assignment of Claims Act of 1940 permits a contractor to use its right to be paid by the Government for contract performance as security for a bank loan (Baker, n.d., p. 161)). The lending institution makes the loan and the Government makes contract payments to the lending institution. The CO must ensure, among other things, that the contract permits assignment of claims, and assignment is to a bank, trust company, or other financial agency. A contractor may also owe the Government money for reasons such as liquidated damages, damages related to default (e.g. reprocurement costs), overpayments, and Government costs to correct latent

defects (defects discovered after delivery) (FAP, n.d., p. 8-26). The Government may collect these contractor debts through offsets (reductions) against contractor invoices, cash payments from the contractor, or by applying tax credits due the contractor against the debt (FAP, n.d., p. 8-26)

Progress payment amounts must also be determined. When progress payments are based on costs, contractors submit an invoice for costs incurred in the prior period (FAP, n.d., p. 8-27). Customarily, contractors are paid 80% of their cumulative total costs (85% for small business). The CO may request an audit of a contractor's record with respect to progress payments (Baker, n.d., p. 167).

In all cases, costs must meet the five-part allowability test. Consideration of economic price adjustments, award fee payments, establishment of the final price of a fixed-price incentive contract or final fee of a cost plus incentive fee contract, and figuring prospective or retroactive redetermination of the negotiated price under a price redetermination contract, must also be completed (FAP, n.d., p. 8-28).

In order to receive Government contracts, contractors must comply with certain rigid rules concerning their accounting systems, cost estimating systems, and methods of pricing. Certain negotiated contracts in excess of \$500,000 require contractors to comply with Cost Accounting Standards (CAS). These standards are meant to achieve uniformity in cost accounting and procedures among Government contractors (FAP, n.d., p. 8-29). When contractors change accounting practices to conform with the CAS, or for other reasons, COs determine the impact of the accounting changes on any affected contracts and, where necessary, negotiate adjustments in their

prices (FAP, n.d., p. 8-31). COs must also ensure that cost or pricing data received, when required, is current, accurate, and complete. If not, the Government may discover that the data were defective in some respect due to such conditions as lower than estimated invoice costs, inconsistent market research, and audits raising questions on the contractor's accounting system (FAP, n.d., p. 8-31).

d. Closeout

Finally the entire process is completed with contract closeout. Contract closeout consists of 15 steps that are listed in the FAR Part 4.804-5. Some of these steps are verifying the contract is actually complete, settling any outstanding issues such as the final price or award amounts if applicable, and making final payment and deobligating remaining Government funds. The CO may make use of individuals during closeout such as Property Administrators who ensure GFP has been returned or accounted for and legal counsel for ensuring that any possible patent statements that may have arisen during the contract have been filed (FAP, n.d., p. 8-32).

The three remaining functions, modifications, terminations, and claims, are invoked only if there are changes in the rights and responsibilities of each party as a result of contract modifications and terminations for convenience or default. Modifications are generally handled under the Changes Clause in contracts, and may be either unilateral or bilateral. The crux of whether a modification would result in a new contract being needed depends on the scope of the change. The general rule is that scope of work circumscribes the intentions of the parties at the time of contract award (Sherman, 1997, p. 40).

Terminations are often very complicated. Often a Termination Contracting Officer (TCO) will be assigned to manage terminations and negotiate settlements on a full-time basis (FAP, n.d., p. 9-7). The Government terminates contracts for essentially two reasons: the requirement has substantially changed or has been cancelled, or the contractor fails, or is failing, to perform as required by the contract (Switlik, 1992, p. 5).

Also included are situations concerning disputes over the terms and conditions of the contract which may result in a claim against the Government for an equitable adjustment (additional money or other accommodation) or by the Government against the contractor for liquidated damages (FAP, n.d., p. 9-10). The contractor has several avenues in which to carry out a dispute in the form of a formal protest. These include filing the dispute directly with the contracting officer, the Board of Contract Appeals (BCA), the Court of Federal Claims (CFC), and the Court of Appeals for the Federal Circuit (Arnavas, 1994, p. 18-4). Protests could even go as high as the U.S. Supreme Court.

Efforts are increasingly being made to encourage parties involved in Government contract disputes to forgo formal litigation whenever possible and instead resolve their disputes through alternative disputes resolution (ADR), such as minitrials, arbitration, use of settlement judges, and mediation (Arnavas, 1994, p. 18-11). These methods, although voluntary, are highly encouraged by the BCA and CFC due to their lower costs and faster processing time (Arnavas, 1994, p. 18-11).

In summary, the three phases of the Federal Acquisition Process, presolicitation, solicitation-award, and post-award administration, encompass the primary

duties of procurement personnel. The 78 tasks are quite clear from a definitive view, but present a difficult undertaking in terms of risk. Each task harbors potential risks of varying types, frequency, and potential impact. A key responsibility of contracting personnel is carefully identifying risks, assessing their impact, and devising and implementing ways of managing them. The second part of this chapter explores the concept of risk and techniques of risk management. This serves as preparation for Chapter III in which the most prevalent risks within the Federal Acquisition Process are identified, associated consequences listed, and possible treatments recommended.

C. RISK

Ask any two people for the definitions of risk and uncertainty and you will likely get two different answers. In addition, definitions vary among organizations (Anderson, 1997, p. 341). Risk in acquisition is often concerned with the exposure of a program to loss or injury in terms of failure to meet program goals (Loral, 1995, p. 8). To measure risk we must accordingly measure both of its defining components, the chance or probability, and the magnitude of negativity or its consequence. Estimation of risk is usually based on the expected result of the conditional probability of the event occurring times the consequences of the event given that it has occurred (Ansell, 1992, p. 5).

1. Distinguishing Characteristics

Risk and risk taking can be viewed from a multidisciplinary approach (Shapira, 19, p. 4). George Washington University's course on risk and risk management identifies five characteristics of all risks. These are that risks are situational, time-based, interdependent, magnitude dependent, and value-based (ESI Course, 1998, p. 10).

a. *Situational*

Risks are a function of the situation or environment in which they are encountered. This is often due to a lack of control or information regarding a specific task or function of operation. This could be due to a lack of experience, organizational dysfunction, or reliability of support. Every situation poses its own risk and similar situations may pose significantly different risks due to different control and informational factors (ESI Course, 1998, p. 10).

b. *Time based*

The fact that risks are often a function of the timeframe one has to evaluate their impact and make a decision is similar to that of the situational characteristic. Often time, like an uncertain situation, is out of one's control. This makes the method of risk management more difficult and puts significant pressure on the decisionmaker (ESI Course, 1998, p. 10).

c. *Interdependent*

Very rarely are risks isolated, having no effect elsewhere in an acquisition. For instance, a slip in schedule will often cause individuals to increase funding or personnel in order to bring it back on line, causing funding or schedule problems in another area of the acquisition (Most Common Schedule Risks, n.d.). If this is left unchecked, the situation can spiral out of control. Individuals must realize what total impacts risks have on the whole problem, not just the one area of concern at that given moment.

d. Magnitude Dependent

This is the common sense realization that risks are classified based on their amount of loss. An individual would feel much easier about making a 50/50 bet of 50 cents in order to win \$1 versus making a \$5000 bet in order to win \$10,000. This fact allows individuals to classify risks as low, medium, or high depending on their impact to the individual or the organization. Coupling this fact with the likelihood, or probability, of occurrence allows a clear quantification of the risk (ESI Course, 1998, p. 10). Some risks presenting a low probability of occurrence, but high consequence of loss, may be ignored due to the cost of monitoring them in terms of dollars or personnel. This is due to the fact these risks are unlikely to occur. The same would be true for a situation involving risks of a high probability but low consequence or magnitude. Time and money may be better spent on risks of a medium or high likelihood of occurrence of a medium or high magnitude of loss.

e. Value Based

The ways in which individuals and organizations view risk is greatly influenced by personal, corporate, and cultural values. This is also known as risk perception. Risk perception involves people's beliefs, attitudes, judgements, and feelings, as well as the wider social or cultural values and dispositions that people adopt (Royal Society Study Group, 1992, p. 89). Personal values are those that an individual has gained from his upbringing and environment. These are sometimes thought of as different than corporate values. A study conducted by Zur Shapira found that 70% of individuals questioned found risk taking to be easier in organizational settings. One

respondent said "it is easier to risk the firm's rather than your own money" (Shapira, 1995, p. 124).

This may contrast to the widely accepted perception of Government employees as risk avoiders. This may be due to the cultural values of individuals in the fact that contracting personnel are stewards of the taxpayer's money. Their responsibility is to spend wisely and frugally, not to increase profits or market share. This is inherently risk averse. The contracting official who can balance the line between risk taking and risk management, using all available resources at his or her disposal, will be the individual sought after as a valuable, value-added asset.

Risk has come to be associated with a negative situation. Risk actually constitutes a lack of knowledge or uncertainty concerning future events. Future events that are favorable are called opportunities, whereas unfavorable events are called risks (Hitz, 1997, p. 23). Today individuals are concerned with avoiding, eliminating, or reducing risks in order to garner a smooth operation free from problems. In acquisition, risks are often identified in terms of cost, schedule, and performance and their effects on a program's survival. What individuals do to control, or mitigate risks are known as risk responses or treatments.

2. Risk Management

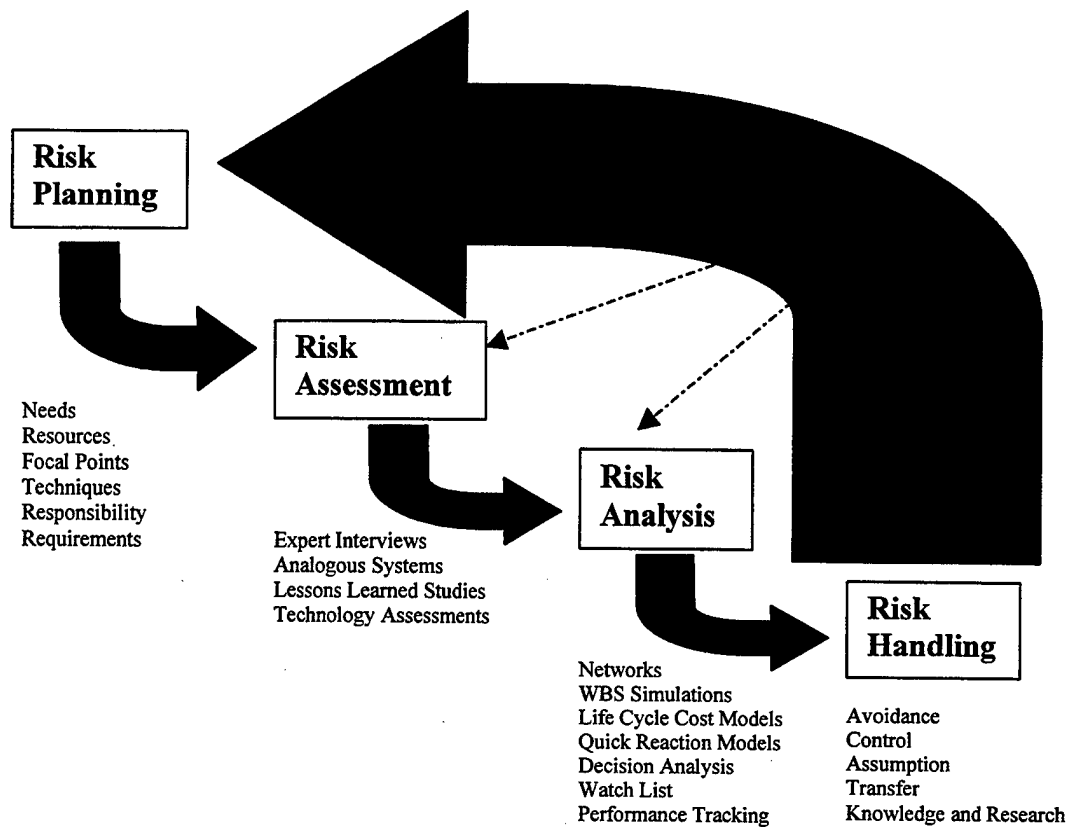
Risk management is the act or practice of dealing with risk (Ansell, 1992, p. 12). It includes planning for risk, assessing risk areas, developing risk-handling options, monitoring risks to determine how risks have changed, and documenting the overall risk management program (RM Guide, 1998, p. 5). Department of Defense Directive

(DoDD) 5000.1 and Department of Defense Regulation (DoDR) 5000.2-R do not define risk to coincide with discussions of risk management or risk reduction (Steves, 1997, p. 40). The DoDD 5000.1 defines risk management as an approach that

...encompasses identification, mitigation, and continuous tracking, and control procedures that feed back through the program assessment process to decision authorities. To ensure an equitable and sensible allocation of risk between Government and industry, PMs and other acquisition managers shall develop a contracting strategy approach appropriate to the system being acquired. (DoDD Directive 5000.1, 1996, p. 4)

Risk management identifies and evaluates the program areas vulnerable to high levels of uncertainty. Its purpose is to provide a means of comparing risk management performance to a standard of tracking risk-related information (Steves, 1997, p. 41). By doing so, DoDR 5000.2-R adds that risk management becomes an essential element of a program's acquisition strategy (DoDR 5000.2-R, 1998, Part 3, p. 3). The Risk Management Guide for DoD Acquisition identifies three key areas for managing risk. These are risk planning, assessment, and handling. Within each of these steps are other key tasks in order to effectively manage risk. The Defense Systems Management College (DSMC), publishes the Risk Management Guide for DoD Acquisition and portrays the risk management process as seen in Figure 2. The process is iterative, with the each phase building on an continually being checked against the previous ones. Note, that DSMC includes risk analysis as a part of risk assessment when conducting the process, but have chosen to list the functions of risk analysis separately for distinction (Hitz, 1997, p. 5-2).

DSMC RISK MANAGEMENT PROCESS



Source: (Risk Management, Concepts, and Guidance, 1989, p. 5-2).

Figure 2. DSMC Risk Management Process

a. Risk Planning

Risk planning is the process of developing and documenting an organized, comprehensive, and interactive strategy and methods for identifying and tracking risk areas, developing risk mitigation plans, performing continuous risk assessments and to determine how risks have changed, and assigning adequate resources (RM Guide, 1998, p. 5). During this step, the direction of the PM or organization's strategy of how risks will be managed is detailed through a Risk Management Plan. This plan is the roadmap

that tells the Government and the Contractor team how to get from where the program is today to where the PM wants it to be in the future (RM Guide, 1998, p. 10).

Risk planning starts from the beginning of the pre-solicitation phase in order to force organizations to allocate time and effort toward the subject and to develop a systematic approach to eliminating, minimizing, or containing the effects of undesirable occurrences (Hitz, 1997, p. 29). The planning of risk must be thoroughly done from the beginning, not on a handle-it-as-it-comes basis. The latter will only lead to confusion and a compounding of problems later. This is difficult to do, but allows for a more comprehensive assessment and analysis of the risk and a more applicable handling technique to be identified in order to more efficiently and effectively allocate resources.

b. Risk Assessment

Risk assessment consists of identification and quantification, and analysis. Risk identification begins by compiling the acquisition's risk events, or all of the things that could go wrong. These events should be defined to a level that an individual can comprehend the potential impact and its causes (Pritchard, 1997, p. 23). For example, a potential risk event for a contractor could be failure of one of its subcontractors to deliver a needed item.

Risk quantification includes addressing each possible risk, and what constitutes high, medium and low risks. The way in which each organization quantifies risk is largely a management decision, but it is not intended to be heavily mathematical (Todd, 1997, p. 29). The relationship between the two components of risk, probability and consequence, is important in determining the correct or intended risk quantification.

Risk analysis is the process of examining each identified risk area or process to refine the description of the risk, isolating the cause, and determining the effects (RM Guide, 1998, p. 5). Analysis begins with a detailed study of the risks that have been identified. Impact assessments are normally subjective and based on detailed information that may come from:

- Comparisons with similar systems,
- Relevant lessons-learned studies,
- Experience,
- Results from tests, and prototype development,
- Data from engineering or other models,
- Specialist and expert judgments,
- Analysis of plans and related documents,
- Modeling and simulation,
- Sensitivity analysis of alternatives. (RM Guide, 1998, p. 14)

c. Risk Handling

Risk handling is the process that identifies, evaluates, selects, and implements options in order to set risk at acceptable levels given program constraints and objectives (RM Guide, 1998, p. 6). It is important that the handling technique, or treatment, is commensurate with the level of risk. It must alleviate the problem without putting the program or organization at a greater risk somewhere else in terms of cost, schedule, performance, default, or legal risk. Opinions are sharply divided as to how

much public money should be allocated to risk management as a whole, how it might be distributed between potential sources of risk and where the balance should lie between expenditure on prevention and expenditure on compensation (Ansell, 1992, p. 13).

The DoD Risk Management Guide for Acquisition lists four handling techniques that can be taken: risk avoidance, control, assumption, and transfer. Risk avoidance is just what its name implies, avoiding a risk where at all possible. It could mean taking a lower risk solution in place of a higher one, or meeting the minimum requirements of a system instead of enhancing its performance by exploring higher risk options.

Risk control does not attempt to eliminate the source of risk but seeks to reduce or mitigate the risks. It is the process of accepting a risky situation and formulating strategies to mitigate the risk's occurrence and impact (Todd, 1997, p. 31). This goes beyond simply avoiding the risk, but also formulating contingencies should this avoidance fail. One can avoid the risk of eye damage with appropriate safety equipment. If such avoidance fails, medical attention is the contingency action (Loral, 1995, p. 17).

Risk assumption is an acknowledgement of the existence of a particular risk situation and a conscious decision to accept the associated level of risk, without engaging in any special efforts to control it (RM Guide, 1998, p. 19). This involves taking an active, realistic role in the process and dealing with the risk head-on should the situation require it. Management must be careful to identify and pursue those risks that can be safely assumed. This is accomplished through careful completion of the preceding steps.

Risk transfer involves reallocating risk from one area to another. It is not done haphazardly to avoid problems until later, or dump them on another activity, but is a form of risk sharing. Risk transfer techniques include properly structured contracts, performance incentives, and warranties (Todd, 1997, p. 31).

Risk management is a systematic, iterative approach that should be applied continuously throughout all the acquisition phases. DoDD 5000.1 and DoDR 5000.2-R lay the responsibility for risk management at the feet of the PM. In reality, the contracting personnel bear a large part of the burden from development of the acquisition strategy, to RFP and SSP development, through contract modifications, protests and closeout. Guides are useful tools for today's acquisition managers, but "cookbook" solutions are not the answer. In order to acquire products at the best value, acquisition professionals must understand risk, risks in their program, the tools for handling these risks available, and the organizational and cultural attitudes toward this risk. Recent acquisition reform initiatives have opened the door for acquisition personnel to make decisions in areas previously regarded as too risky without thought.

D. SUMMARY

This chapter described the framework for an analysis of risk areas within the Federal Acquisition Process. Though the Federal Acquisition Process may appear to be a sequential process, it is quite iterative with many tasks performed concurrently. A careful understanding of risk, its components, and perception is necessary to more clearly identify risk areas and determine applicable handling techniques. The combination of identifying risks and subsequent consequences within the acquisition process along with

possible risk treatments will allow for development of a general model of risk management in the acquisition process. The DoDD 5000.1, DoDR 5000.2-R, and the Risk Management Guide for DoD Acquisition do well in assisting the program manager on what the key responsibilities are for any acquisition in terms of risk, but fall far short in assisting contracting personnel in identifying potential sources of risk and viable risk treatments in the acquisition process.

III. CONTRACT RISK MANAGEMENT MODEL

A. INTRODUCTION

The Federal Acquisition Process is an iterative, dynamic process. It is also a process laden with risks. Throughout the three phases of the process, certain risks may be more apparent than others. The key to being able to effectively manage those risks is to identify them in the first place. While it may be impossible to identify every risk in the process, those that are most significant and prevalent will aid contracting personnel in crafting an acquisition strategy, and ultimately a contract, that meet the needs of the program/requirement and lend the best value to the government.

B. RISK MANAGEMENT MODEL

The most prevalent risks in the acquisition process are identified within each phase of the process. Corresponding consequences and applicable risk treatments of each identified risk are also presented. There is no assessment made of the probability of the risk occurring or the priority one would assign to the risk in the course of acquisition planning. This process would be highly subjective and applied differently in almost any organization. This research focuses on the breadth of the acquisition process to encompass as many realistic risks as possible regardless of their probability or priority. In this case, the only assumption regarding probability of occurrence is that the risk could reasonably exist. The associated treatments, as well, are what one could possibly apply to the given risk. This list is not exhaustive, but representative of prevalent risks in the process.

The identification of the risks and related, possible consequences are derived from a thorough review of literature, informal discussions with individuals familiar with the acquisition process, and this researcher's own analysis. A common sense approach is used in identifying the risks and consequences. While it is possible that many more individual risks in the process may be present, those identified below are deemed to be the most prevalent and, therefore, most beneficial for consideration by contracting professionals.

Responsibility for the risk treatment should be given to those with most control over a given risk (Queensland, 1996, p. 7). The reader is reminded of the four risk treatments: avoidance, control, assumption, and transfer. The cost of managing risks should always be commensurate with the risk exposure. Since no level of probability is associated with the identified risks, the treatments proposed must be taken at face value. A more detailed cost-benefit analysis would be required to fully analyze and select the correct treatment method for each situation according to many factors evident in that particular procurement in that particular organization.

1. Presolicitation Phase

The presolicitation phase of the acquisition process includes the functions of determining the need, initiating the procurement, analysis of the requirement and sourcing. The prevalent risks within each function of this phase are presented narratively, followed by a model of the identified risk, consequences, and applicable treatments, for use by contracting professionals. The entire acquisition process begins with a clear definition of the requirement.

a. Determination of Need

If the buyer does not have a clear understanding of its requirements or cannot express that understanding effectively, an agreement cannot be reached with another party to fulfill those requirements (Garrett, 1997, p. 32). Sometimes broad, ambiguous terms are used in solicitations such as "as required" or "as necessary" in an attempt to cover areas of the requirement the buyer is unsure. These can only add to confusion by requiring the seller to figure out what the buyer wants. Some buyers may overcompensate by specifying needs down to the smallest detail. If these are not well researched and incorrect or obsolete they can cause problems. Rare is the buyer who knows as much about a product or service as the companies that design, produce, and market it for a living (Garrett, 1997, p. 33).

The ability to clearly articulate the need of the end user into a clear requirement presents a significant risk. If the requirement is not well understood or improperly identified, the risk of producing the wrong product or service is possible. This could lead to higher costs and schedule delays to correct the problem later in the process (Queensland, 1996, p. 12). It is important that communication between the end user, acquisition officials, including contracting professionals, and potential offerors clearly identifies the requirement. This can be accomplished through the use of Integrated Product Teams (IPTs) in which individuals and groups integral to the acquisition (acquisition team) come together to voice their ideas and concerns (Nash, 1997, p. 16). IPTs can clear up discrepancies and confusion concerning the documentation of the requirement and ways to approach the acquisition.

Effective acquisition planning is also a risk treatment for mitigating the risk of poorly defining a requirement. Acquisition planning is an expansive term that includes actions aimed at stating the Government's needs, identifying potential sources, and determining the techniques to be used to satisfy those needs (Cibinic, 1997, p. 261). The planning process brings all members of the acquisition team together to formulate the strategy that will be used to conduct a procurement (Cibinic, 1997, p. 261).

Even though the requirement may be well defined other risks in the presolicitation phase are present. There may be a desire to improve the basic requirement in order to get the best possible performance, no matter the cost, from the product or service. This is known as "gold-plating" the requirement (FAP, n.d., p. 6-5). This can lead to higher costs and delays in order for the contractor to produce the required good or service. Ensuring that the requirement includes only what is actually required to satisfy the end user's need is a good risk treatment. This involves following the Operational Requirements Document (ORD), which was produced by the user to originally state their need. IPTs can also treat the risk of gold plating the requirement by allowing all parties to agree on the characteristics of the requirement.

The use of options to buy or lease equipment is also a risk treatment. Federal Acquisition Regulation (FAR) clause 52.207-5 is an optional clause that allows the Government the option to buy or lease equipment. Another clause, 52.207-4, states that "offerors are invited to state an opinion on whether the quantity (ies) of supplies on which bids, proposals, or quotes are requested in the solicitation are economically advantageous to the Government." This treats the risk of poor forecasting through

gaining input from contractors concerning the optimum quantities to buy (volume or discount buys).

Over the years, the Government has developed a number of solicitation provisions, or contract clauses, that are intended to mitigate specific types of risk (FAP, n.d., p. 1-7). The FAR part 52 includes clauses that apply to Government contracts. Some are mandatory clauses, while others apply only to specific situations. Certain mandatory clauses include the rights of the Government to unilaterally impose changes, to terminate work, and to order work stoppages. For instance, mandatory clauses 52.243-1 and -2, the Changes clause for fixed-price or cost reimbursement contracts, respectively, allow the CO to make changes within the scope of the contract. Optional clauses may pertain to the requirements for cost and pricing data from contractors in certain contracts, or the liquidated damages clause, which requires the contractor to pay mutually agreed to damages, if they "fail to deliver the supplies or perform the services within the time specified in the contract." (FAR 52.211-11) Clauses can be a significant risk treatment, if used properly.

Streamlining of the Federal Acquisition Process will not be achieved through adding unnecessary provisions to Government contracts. There are, however, necessary actions to be taken to manage risk. Incorporating contract clauses are one such action. Only nine clauses of the hundreds available are mandatory (FAR, Part 52). Each clause applies to a specific action or series of actions within each acquisition. They should be tailored to each situation. Clauses are a tool readily available to contracting personnel, and cover actions necessary in the process without requiring increased time

and effort. By knowing the clauses, and understanding their applicability, they can be an invaluable risk treatment.

The very nature of forecasting presents a significant risk, especially if situations change. This can result in an inefficient allocation of resources, and the purchase of the incorrect amount or type of goods and services. Effective acquisition planning can again treat the risk of inaccurately forecasting requirements through development of realistic schedules, budgets, and long-range strategies for reducing the resources and time required for mission accomplishment (FAP, n.d., p. 6-4).

b. Initiating the Procurement

Two key duties of contracting personnel that present risk in the presolicitation phase are conducting adequate market research, and ensuring adequate funding is appropriated for purchases. Market research is one of the key steps in acquisition planning. Market research is the action taken to improve a purchasing organization's understanding of the market from which they procure their supplies and services (Hearn, 1996, p. 22). Market research compares the user's need to the capabilities of the commercial market to determine:

- The availability of products to meet the requirement as is,
- The ability of suppliers to modify their products to meet the user's requirement, and
- The flexibility of users to modify their requirements to allow the purchase of commercial items, commercial services, or nondevelopmental items. (SD-5, 1998, p. 3)

Thorough market research can aid in accomplishing many functions during this phase. Market research includes understanding the industry manufacturing processes and external factors that affect the market. Another important benefit is to get a better focus on the current market price for a product or service (Hearn, 1996, 22). This aids in identifying how many, or even if any potential sources exist in the marketplace that can satisfy the requirement. This could be due to the complexity of the item, the state of current technology or prohibitive costs to produce the item. Market research aids in refining the requirement, especially involving state-of-the-art technology, as well as in make, lease or buy decisions by the Government.

Poorly conducted market research or the failure to understand, analyze, and apply market data can be a risk, as well. The key treatment is to conduct market surveillance and to fully investigate all market conditions bearing on the acquisition. This may require a comprehensive database to store and compare market data. It also includes seeking market information from other agencies, catalogs, trade and technical associations, historical data, and possibly individual experts for certain high-tech or complex items. In this way, market research can be a highly effective risk treatment throughout the acquisition.

The Contracting Officer (CO) must also understand Federal funding procedures. Funds are appropriated for a specific use and have a specified "life" in terms of a period of time in which they must be obligated (FAP, n.d., p. 6-12). The CO must know for which acquisition, and for how long the funds are valid. If funds are improperly obligated or unavailable this may result in termination of work and delays in

the end user receiving the required good or service. Improper obligation of Government funds may also result in an Antideficiency Act violation. This is when funds are improperly obligated by someone without authority to do so, or if insufficient funds exist to cover commitments (FAP, n.d., p. 6-13). In either case, the CO can be held personally and legally liable for the violation. A few key risk treatments to avoid this occurring are:

- Making the solicitation "subject to the availability of funds."
- Including options for increased quantities or extension of the contract period.
- Use of Indefinite Quantity or Requirements terms and conditions.
- Incorporating clauses that provide for year-by-year funding of multiyear requirements.

c. Analysis of Requirement

The use of design specifications can present a risk in the process. Design specifications establish precise measurements, tolerances, materials, in process and finished product tests, quality control, inspection requirements, and other specific details of the deliverable (FAP, n.d., p. 6-18). Design specifications present a risk to the Government because they must be correct, since they will be used exactly as stated by the contractor.

The use of performance and functional specifications can aid in avoiding problems with obsolete or restrictive design specifications, but must be well described and understood by all parties. Performance specifications describe the deliverable in terms of desired operational characteristics (FAP, n.d., p. 6-18). Risks can develop if the performance requirements are not well communicated between the Government and

contractor. A treatment is to use a threshold (minimum acceptance level) and objective (desired acceptance level) in order to satisfy the requirement. The use of draft solicitations in which potential offerors make comments concerning the specifications intended and provide immediate feedback, presolicitation conferences which allow all potential offerors to ask questions concerning aspects of the solicitation, and IPTs, are also good risk treatments.

Functional specifications describe the deliverable in terms of performance characteristics and intended use (FAP, n.d., p. 6-18). Functional specifications do not specify any particular approach or type of product. They are the least restrictive type of specification, allowing the contractor greater ability to come up with innovative solutions to satisfy the requirement. This can also be risky, if the requirements or idea of the desired good or service are not clear to both parties. Risk treatments to help with this include using prebidders conferences or site walk-throughs in which potential offerors can see an example of what the desired product should look like and how it should perform, and ask questions.

A Statement of Work (SOW) describes the contract work to be performed and incorporates any applicable specifications (FAP, n.d., p. 6-21). The SOW identifies what the contractor is to accomplish. The SOW performs two primary functions: it is the basis for the offeror's proposals, and it is the basis for the contractor's performance and measuring compliance over the life of the contract (Wilson, 1996, p. 19). It clearly identifies primary and secondary objectives so that the Government and contractor know where and how to place their emphasis. The clarity, accuracy, and completeness of the

SOW determines, to a large degree, whether the objectives of the contract will be achieved (Dobler, 1996, p. 410). The CO reviews the SOW and should ensure it:

- Is a clear, precise, and complete statement of the work to be performed.
- Makes a clear-cut division of responsibility between the contracting parties.
- Does not exceed the Government's actual minimum need (gold plate).
- Is not unduly restrictive.
- Is stated in terms that the market can satisfy.

The scope and elements of the SOW vary greatly on what is being procured, and the size of the acquisition in terms of size and complexity (FAP, n.d., p. 6-22). The SOW can be tailored to each acquisition. Use of a Statement of Objectives (SOO) can serve as a risk treatment for problems encountered in using a restrictive SOW, by allowing contractors to devise more innovative ways of accomplishing the work necessary to satisfy the requirement. There are also many references available in publication and on the Internet that aid in preparation of SOWs and SOOs, including the DoD handbook for preparation of statement of work, MIL-HDBK- 245D.

d. Sourcing

Since the Government purchases goods and services with public funds for public purposes, the Government has directed many of its regulations toward social and economic objectives not directly germane to the primary purpose of the expenditures (Risk Elements, 1970, p. 2). Many of the clauses and requirements in Government contracts are designed to advance such objectives, such as the Buy American Act, and

provision related to prison labor, small business, equal opportunity, and labor surplus areas. A significant risk can be the omission of these socioeconomic requirements in the acquisition process. The contracting professional must be familiar with FAR Parts 8 and 19 through 26; concerning required sources and socioeconomic programs. They should also consult the Small Business Association when in question. These are good risk treatments.

One of the goals of the Federal Acquisition Streamlining Act (FASA) of 1994 was to allow the Government greater flexibility in obtaining the best value in acquisition. (FASA, 1994) This acknowledges that cost alone may not always be the predominant evaluation factor in choosing the best offer. A higher level of quality, better management technique, and use of past performance data may all be considered and possibly deemed individually, or in combination, to be more important than cost. Significant risk lies in choosing price and technical factors. These factors must be carefully considered and communicated to offers in Section M of the solicitation. If they are arbitrarily chosen, or not used, higher acquisition costs, delays, and possible protests may arise.

Price related factors are factors that aid in determining the offer representing the best value in terms of the lowest total cost to the Government over the life of the acquisition (FAP, n.d., p. 6-38). Sometimes, for simple acquisitions, this is easy to determine. At other times, many price factors may need to be considered such as delivery costs, maintenance costs, upgrade costs, and possibly tariffs or taxes. Using IPTs and market research can aid in selecting and refining price related factors.

Technical factors, or non-price-related factors, are used when the best value offer will be decided on more than just price. Potential technical evaluation factors include:

- Understanding the problem.
- Technical approach or methodology.
- Qualifications of key personnel.
- Experience in performing the same or similar work.
- Management capability.
- Past Performance.

The method of how the evaluation factor will be evaluated, as described in the Source Selection Plan (SSP) must also be considered. This can present risks if not clearly stated and understood by Government personnel who will perform the evaluation, and contractors. The CO should ensure the technical factors address both performance and proposal risk. Performance risk evaluation addresses the capability of the contractor to perform the work required. Proposal risk addresses the technical merits of the proposal.

The final prevalent risks of the presolicitation phase concern selection of the proper method of procurement. This is most often a function of factors such as:

- Estimated cost or price of the item or service.
- Whether an item exists or must be developed.
- Complexity of the work to be performed.

- Type of specifications.
- Competitive nature of the supplies or services to be acquired. (FAP, n.d., p. 6-42)

The use of market research, and thoroughly understanding the requirement are the main risk treatments to prevent the risk of choosing the wrong procurement method which could result in higher costs, delays, and possible termination. Contracting professionals must be thoroughly knowledgeable of the steps and procedures of Simplified Acquisition Procedures (SAP), sealed-bidding, and competitively negotiated acquisitions, the primary procurement methods. The procurement method itself can be a key risk treatment for the entire acquisition, including selection of the best value offer, so it must be carefully and correctly selected.

Now that the prevalent risks, possible consequences, and applicable risk treatments within the presolicitation phase have been identified, a general model of risk within this phase can be developed. This model can serve as a quick reference for contracting personnel in order to consider key risks, consequences, and treatments in the acquisition process. Figure 3 presents a graphical form of this information. The framework for the model in Figure 3 is based on the model used by the Queensland, Australia Information and Procurement Division in their Managing Risk in Purchasing Quick Guide. It is recommended as a type of thinking process for contracting professionals to undertake when considering risks in the acquisition process.

RISK	CONSEQUENCE	TREATMENT
Determining Needs -User requirements improperly identified or misunderstood	-Need not satisfied; wrong product produced and purchased; resources wasted	-Clearly written ORD; use of IPTs, market research, acquisition planning;
-Failure to validate need and obtain approval	-Possible cancellation of action and restart; delay	-Ensure ORD is completed; comprehensive Acquisition Plan and Strategy
-Gold plating requirements; seek silver bullet	-Requirements creep; wasted time and resources; possible delay	-Adherence to ORD requirements; IPTs to monitor progress
-Improperly forecasting requirements	-Planning for wrong number to be needed	-FAR Clauses 52.207-4 and -5; requests offeror opinion on quantities required and gives option to lease or buy equipment
Initiating the Procurement -Imprecise Purchase Request or order	-Ordering wrong product or quantity	-Communication between all parties; use of IPTs
-Inadequate funding	-Cancellation of procurement later	-Communication between all parties; use of IPTs
-Improperly committing Government funds	-Anti-deficiency Act violation	-Know Federal funding procedures, i.e. period of obligation availability, when funds expire
-Improper Market Research	-Failure to identify best solution to requirement, use of commercial items, technology	-Constant market surveillance and investigation, update data, comprehensive information base

Source: Data compiled by researcher.

Figure 3.

-Improperly applying market data	-Bad business decisions concerning whether requirement can be met, buy or lease, quantity to order, cost, etc.	-Seek help from other agencies, trade and technical associations, technical personnel, historical data
Analysis of Requirement -Use of design specifications	-Must be accurate or product/service will fail, restrictive on innovation	-Use widely accepted ISO standards, use only when absolutely required
-Use of performance specifications	-Unclear understanding of performance required between Government and contractor	-Establish threshold (minimum) and objective performance criteria
-Use of functional specifications	-Misinterpretation of need, no approach or product specified	-Prebidders conference, site walk through, draft RFP, obtain input
-Inadequate Statement of Work	-Unclear delivery, performance, inspection, and acceptance criteria, use of GFP, schedule problems	- Use IPTs; use a SOO rather than a SOW to garner best innovations; use of MIL-HDBK-245D
Sourcing -Failure to consider required sources (FAR part 8)	-Violation of law; protest by available yet unselected offerors	-Follow rules in FAR part 8 and part 19 involving small businesses and set asides
-Failure to include small businesses and partial set asides in subcontracting efforts	-Protest by available offerors; delay in award and start of work	-Use of FAR clauses 52.219-6, -7, and -14 involving total, partial, and subcontracting set asides
-Selecting a small business or set aside that will not perform properly	-Delays in production, higher costs, possible default	-Obtain information regarding performance from SBA, require certificate of competency, past performance information
-Inconsistent or arbitrary selection of price-related factors to be used in selecting best value offeror	-Protest by offerors; higher overall costs, delays	-Tell offerors in solicitation which factors will apply; ensure factors match requirements, use IPTs and market research

Figure 3 (Continued)

-Inconsistent or arbitrary selection of non-price related factors, i.e. technical factors	-Protest by offerors, poor quality and performance of product; failure to consider understanding of the requirement, poor management capability, past perf.	- Use of IPTs to evaluate offers and ensure proposal is realistic to work required; Ensure RFP matches SSP, include past performance data
-Incorrectly selecting best method of procurement	-Increased procurement costs and delays	-Know rules regarding SAP in FAR part 13; thoroughly understand the requirement; market research

Figure 3 (Continued)

2. Solicitation-Award Phase

The solicitation-award phase involves identifying the terms and conditions of the solicitation, soliciting offers, evaluating the offers under sealed-bidding or competitive negotiations, and awarding the contract. The phase begins with development and publication of a solicitation.

a. Solicitation

A solicitation consists of a draft contract and solicitation provisions (FAP, n.d., p. 7-3). The draft contract includes a "schedule," which describes the requirement, and contract clauses. The two main types of solicitations are Invitations for Bids (IFBs), used in acquisitions by sealed-bidding, and Requests for Proposals (RFPs) used in acquisitions by competitive negotiation. Solicitations tell offerors how to prepare and submit their offers. They also describe how bids or offers will be evaluated. A prevalent risk lies in the inability to clearly communicate the requirement and evaluation factors to be used in source selection. This can result in protests and a loss of confidence in the

process, which can ultimately have a negative effect competition on future acquisitions. It is also possible that the solicitation may not match the correct procurement method. For instance, a highly technological, new, or complex requirement would most likely require a competitively negotiated acquisition to allow a more detailed analysis of offers.

Use of an IFB in this situation, however, would require a sealed-bidding procurement and require award of a firm fixed-price contract or fixed-price with economic price adjustment contract (Hearn, 1996, p. 49). This would not be the best procurement method or contract type since the contractor would bear a significantly larger amount of cost risk. In order to effectively treat risks such as this, the CO should ensure use of either the IFB or RFP matches the requirement clearly and is well-written and supported by all members of the acquisition team. The use of draft RFPs, in which solicitations are reviewed by potential offerors before actual publication in order to receive feedback and make adjustments to the RFP, and presolicitation conferences, are also good risk treatments.

The selection of contract type is perhaps the most widely regarded risk treatment in the acquisition process, by Government and contractors alike (FAP, n.d., p. 7-4). Because the type of contract should reflect the degree of risk exposure to both the contractor and the Government, use of an appropriate contract type is very important (FAR 16.1). The primary objectives of the Government should be to make maximum use of the type of contract that includes reasonable contractor risk, and provides the contractor with the greatest incentive for efficient and economical performance (Hearn, 1996, p. 73). A risk of selecting the wrong contract type can exist in a situation similar to

the one previously mentioned concerning a new, complex item. The CO must be aware of the basic uses of fixed-price and cost reimbursement contracts in order to effectively treat risk in the process. Fixed-price contracts should be used to increase the profit motive of the contractor when the risk involved (such as cost, schedule, and required performance) is minimal or can be predicted with reasonable accuracy. Cost reimbursement contracts may only be used when:

- The contractor's accounting system must be adequate for determining costs applicable to the contract.
- Appropriate Government surveillance during performance will provide reasonable assurance that efficient methods and effective cost controls are used.
- The contract will confirm to the statutory limitations on price or fee (Hearn, 1996, p. 73).

The CO must be knowledgeable of all of the various types of contracts available and use the facts of the current acquisition, such as complexity of the requirement, time required for product or service delivery, dollar amount, contractor past performance, and market research data to make that selection. Careful selection of contract type can be a risk treatment, but also a risk if not well researched and supported. Certain clauses can be added to contracts to mitigate possible risks such as clause 52.216-5, which allows a price redetermination to adjust changes in cost incurred during a contract. This ensures prices are tied to market indices over a longer performance period so as to not put the Government or contractor at risk due to fluctuating market conditions (FAR 52.216-5).

Variant forms of fixed-price and cost reimbursement contracts may be used, such as incentive contracts that give the contractor a degree of cost responsibility and a positive or negative profit incentive. Award fees may also be used, which motivate contractors toward a higher level of performance in certain areas during a specified time, and that are not susceptible to factors such as precise measurement of cost efficiency and technical performance (Arnavas, 1994, p. 4-20). Award fee judgments are more subjective in nature, but monitoring the contractor's performance over the specified time of consideration must be well documented to support the award fee decision. Selection of a proper contract type can also treat risk in a sole-source acquisition, which is a noncompetitive acquisition in which only one responsible source is determined to exist to satisfy the requirement. A sole-source acquisition places the Government at a greater risk than in competitive procurements, due to reliance on the one source (contractor) to produce the needed good or service, and the leverage such as a contractor possesses. The use of award and incentive fees are one risk treatment that can protect the interests of the Government in a sole-source contract by ensuring visibility and insight into performance of certain cost, technical, or other chosen factors within the contract.

The CO should carefully assess the financial status of the contractor before award, and monitor it carefully during contract performance. Certain types of contractor financing may be required. A risk lies in the possibility of a contractor not receiving adequate financing to perform the contract, either from the Government or commercially. The possibility of the Government providing too much financing is another risk that could result in funds being inappropriately or unfairly allocated, and the

contractor having less of an incentive to control costs. In order to treat these risks, the CO must conduct a comprehensive evaluation of the contractor's financial status, including their cash flow, and provide financing only when absolutely. Government financing should be considered only after the contractor has attempted to receive private financing first.

There are specific rules regarding the format, clauses, and provisions to be included in a solicitation, as well as the proper publication and possible amendments or even cancellation of solicitations. The CO must ensure the solicitation includes the necessary information including a well-defined requirement, instructions, notifications, and notices to offerors regarding proposal submission, and a clear explanation of how offers will be evaluated. This requires effective communication on the part of the contracting professional. The use of draft RFPs to obtain feedback from industry, the use IPTs to gather and discuss all information, and possibly the use of prebid or preaward conferences to openly discuss questions and complex procurements with all potential offerors at one location, are key risk treatments.

The CO will also determine if Government-Furnished Property (GFP) is to be included in the contract. The use of GFP can assist the contractor and the Government in providing products for performance to be used during contract performance that can reduce the acquisition time and save money. If the GFP is not properly managed and accounted for, the risk of the contractor improperly using it to gain in unfair advantage on other work may occur. The use of standard contract clauses 52.245-2 and -5 which

concern the use of GFP in fixed-price and cost reimbursement contracts, respectively, is a good risk treatment.

The rules for properly publicizing, amending and, if required, canceling solicitations are quite clear and spelled out in FAR. The CO should be very familiar with these to avoid the risk of protest. Solicitations must be publicized on the Commerce Business Daily for a specified period of time. The use of a comprehensive bidders list can ensure potential offerors are notified of solicitations. It may also be helpful to develop a checklist of required tasks for publicizing offers to ensure the greatest amount of competition for the award. Solicitations can only be amended in order to change quantity requirements, delivery requirements, due date for offers, or to correct or clarify an ambiguous or defective solicitation (FAP, n.d., p. 7-25). They can be cancelled only if the requirement no longer exists, or funds are no longer available.

b. Evaluation-Sealed Bidding

The key risks in evaluating offers under sealed-bidding include following the process for receiving, securing, controlling, opening and abstracting bids as described in FAR Part 14.4. If these strict rules are not followed the whole acquisition may be compromised in the form of protests filed by unsuccessful offerors, and a loss of confidence and integrity in the process. This may lead to negative impacts on competition in future acquisitions. One of the key risk treatments is to ensure all offerors are responsive, meaning their bids conform to the essential requirements of the IFB. A bid that is nonresponsive at the time of bid opening cannot later be made responsive. Only minor informalities or irregularities that are a matter of the form and not the

substance of an offeror's bid may be corrected before award under sealed-bidding (FAP, n.d., p. 7-34). It is an immaterial defect that can be corrected or waived without being prejudicial to other bidders.

The other prevalent risks in sealed-bidding evaluation are determining a fair and reasonable price for evaluation, and ensuring a technically acceptable offer. Market research is the risk treatment to be used in determining a fair and reasonable price for comparison of offers. This includes checking catalog prices, prices in previous procurements for like items, and the extent of competition (FAP, n.d., p. 7-39). The determination of an offeror's technical acceptance requires the CO ensure their proposal reflects the fact they understand the requirement, their stated approach to meeting the requirement is viable and realistic, and they are capable or responsible enough to perform the work. This can be accomplished through use of technical experts, past performance information, and market research.

c. Evaluation-Competitive Negotiation

The evaluation of offers under competitive negotiation are somewhat more difficult and therefore, present many more risks. This is because the evaluation may include many more evaluation factors other than price, as in sealed-bidding. Many more individuals aid in the performance of a competitively negotiated acquisition, which can pose a risk to the CO of ensuring consistent application of the steps of the SSP and evaluation of selected factors. Effective training and control of the Source Selection Evaluation Board (SSEB) and Source Selection Advisory Council (SSAC), or Technical Evaluation Board (TEB) in smaller acquisitions, can be difficult. Conducting trial source

selection boards and allowing separate, impartial individuals to observe and review the SSP procedures can be good risk treatments.

Cost and non-cost factors may be used to evaluate the offer presenting the best value. This includes consideration of possibly past performance information, management capability, technical capability, and quality, in addition to total price, as direct factors to be compared between offers. Often, a price analysis is insufficient to determine a fair and reasonable price under a competitively negotiated acquisition. The CO may require submission of cost or pricing data to manage risks associated with the inability to evaluate the overall price, or realistic cost of the effort.

After proposals have been compared to the requirements in the RFP, the CO has a responsibility to determine the competitive range of offers who warrant further consideration and have a realistic chance of winning the contract (FAP, n.d., p. 7-43). The criteria used to eliminate offerors from the competitive range must be consistent and well-supported or unsuccessful offerors will likely protest. In analyzing the competitive range, only one clear offeror may be identified who can satisfy the requirement at a fair and reasonable price. In this case, the CO may decide to award without further discussions. Awarding without discussions may be done if the solicitation allows it, no discussions have been held with any offerors, the proposal in line for award is responsive, and award would be at a fair and reasonable price (FAP, n.d., p. 7-44). This can avoid further risks by shortening the process.

If negotiations are required, the CO must develop a strategy in order to satisfy the Government's requirement. Development of a negotiation plan can treat risks

associated with overlooking or inadvertently ignoring important information to be used in negotiations such as factfinding results, field pricing reports, independent cost estimates, technical evaluations, and market research (FAP, n.d., p. 7-45). The CO must be careful not to improperly communicate with offerors by committing technical leveling or transfusion. A negotiation plan and rehearsals can aid in treating this risk by setting an agenda, including tactics, and practicing the negotiation.

d. Award

The award of a contract must be to a responsible offeror. The use of past performance data and the Performance Risk Assessment Group (PRAG) can aid in this endeavor and treat associated risks concerning selection of poor past performers. The PRAG is a group of experienced Government personnel that collect past performance data and make recommendations to source selection boards (PRAG, 1997, p. 4). The PRAG conducts an analysis of past performance to determine the degree of risk involved in accepting a contractor's promises of performance. Past performance data and many other factors can contribute to the contract type selected, depending on the amount of risk the Government is willing to accept.

The debriefing of unsuccessful offerors must be well planned. The CO should ensure individuals such as legal and technical experts are present to lend assistance, and avoid a point by point analysis of the unsuccessful offer, which is not permitted.

In any acquisition, protests by unsuccessful offerors may occur, regardless of how well the acquisition was conducted. Effective communication, a well-trained

workforce, and consistent procedures and operations can avoid disputes. If disputes do occur, the contracting professional should immediately try to avoid the problem escalating to protest. Above all, contracting personnel must ensure they have acted properly in order to avoid a sustainable protest, which reflects poorly on the acquisition process and personnel conducting it.

Fraud in the acquisition process is possible by both the Government and contractor. This can result in an improper award leading to protests, delays, higher costs, and possibly terminations. Contracting professionals should be aware of key fraud indicators (consult DoD Inspector General reports), stress integrity in the process, reward ethical conduct, and punish unethical conduct. Other risk treatments include training on ethics, rotating tasks and responsibilities between individuals to prevent unethical actions from continuing, and including ethical evaluations during individual performance reviews.

Now that the prevalent risks, possible consequences, and applicable risk treatments within the solicitation-award phase have been identified, a general model of risk within this phase can be developed.

RISK	CONSEQUENCE	TREATMENT
Solicitation -Selecting improper solicitation	-Delays of award, higher costs, protests	-Understand requirement and its complexity; market research; use of IPTs
-Poorly communicating requirement in the solicitation	-Confusion leading to delays, poor quality of work, possible protest	-Use of draft RFPs, presolicitation conferences, IPTs; market research

Source: Data compiled by researcher.

Figure 4.

-Selecting an improper contract type	-Limited cost visibility; failure to properly incentivize contractor to Government needs; cost overruns; award delays; contractor confusion; end user frustration	-Understand requirement; match to procurement method; use applicable clauses, e.g. 52.216-2 thru -5 concerning economic price adjustments following contract award; risk management analysis
-Only one reasonable source to fulfill requirement	-Leverage over performance, schedule and cost lies primarily with the contractor	-Market research, contract type selection and use of award and incentive fees to adequately share risks and monitor performance
-Specific performance areas will not be adequately monitored in a fixed-price contract	-Poor quality; cost overruns	-Consider use of award fees which allow direct evaluation of key performance areas
-Inadequate or improper contractor financing	-Contractor failure to perform, schedule delays, possible default	-Constant communication with contractor; contractor assessment review; clauses 52.232-12 thru -16; contract type selection allowing visibility of costs
-Use of GFP by contractor	-Allow unfair advantage to contractor if used in other work; costs to prepare GFP for use by contractor	-Use of Standard contract clauses 52.245-2 and -5; market research or cost benefit analysis to determine if GFP is needed
-Offeror confusion over proposal requirements	-Delays in award; increased costs; loss of confidence in process	-Effective communication; use of IPTs; prebid/preaward conference
-Inadequately publicizing solicitation	-Protest; inadequate competition	-Use a checklist; always solicit on CBD; consult FAR part 5; use bidders list
-Improperly amend or cancel solicitation requirements	-Give one contractor an advantage over another if change not communicated properly; possible protest	-Carefully consider if amendment is needed; notify all offerors; check the rules in FAR Parts 14 and 15

Figure 4 (Continued)

-Only one reasonable source to fulfill requirement	-Leverage over performance, schedule and cost lies primarily with the contractor	-Requiring subcontractor plans, performance milestones, market research, contract type selection and use of award fees to adequately share risks and monitor performance
Evaluation-Sealed Bidding -Improperly receiving a bid	-Protest by other offerors; delay of award	-Ensure Part L of solicitation is clear and followed; fair and impartial to all offerors
-Unfairly allowing offeror to change bid	-Protest by other offerors; delay of award	-Firm Bid Rule dictates; only minor informalities or irregularities and apparent clerical errors may be corrected
-Price not fair and reasonable	-Higher award cost	-Market research, other proposals, catalogs if applicable
-Awarding to technically unacceptable offeror	-High costs; possible default	-Have technical expert review proposal; ensure responsiveness and responsibility of offeror
Evaluation-Negotiation -Improperly communicating with offerors	-Technical transgression and technical leveling; protest by other offerors	-Strict adherence to guidance in RFP; communicate changes to all
-Improper technical evaluation	-Protest; delay of award	-Follow section M of solicitation
-Procedures in SSP do not follow those in RFP	-Protest; delay of award	-Ensure SSEB and SSAC are well briefed, have read all proposals, and understand evaluation criteria; conduct trial SSB; have separate individual or group review SSP and RFP; common sense check of evaluation criteria for use and ability to measure
-Price not fair and reasonable	-Higher award cost, cannot award contract	other proposals, catalogs; use of cost and pricing data

Figure 4 (Continued)

-Improper competitive range selection	-Protest; delay of award	-Establish consistent, verifiable criteria; include offers with a reasonable chance; based on comparison to other offers alone
-Price analysis insufficient	-Difficult to determine best offer; increased cost, time delay	-Conduct cost analysis; may require cost and pricing data as a last resort
-Poorly conducted negotiations	-Accepting an unpreferred position regarding cost, schedule or performance of contract	-Establish a clear strategy; negotiation plan; conduct detailed factfinding; research other team's characteristics; set going in tactic
-Non-competitive negotiation (sole source)	-Being taken advantage of; accepting a take it or leave it proposal	-Find other party's center of gravity; establish a few key goals and pursue them
Award -Improperly allowing offerors to correct mistakes	-Improvement of bid; protest by other offerors; technical transgression and leveling	-Strict adherence to Firm Bid Rule and Section L requirements; Follow FAR parts 14.406 and 15.607; maintain process integrity
-Awarding to a non-responsible offeror	-Protest; higher cost; default	-Conduct past performance evaluation; use of PRAG data; conduct financial evaluation
-Improper debriefing of unsuccessful offerors	-Protest; delay of award	-Plan debriefing; have legal and technical support present; do not conduct point by point analysis; do not get emotional
-Protest of unsuccessful offeror	-Legal fees; delay of award	-Follow RFP exactly; review award; conduct proper debriefing; if protest is still filed ensure protester follows mandatory clause 52.233-1; know the process and follow the rules

Figure 4 (Continued)

-Fraud by offeror	-Improper award; default; delay of product or service	-Be familiar with the main indicators; consult DODIG directive; investigate all questions
-Fraud by Government employees	-Improper award; default; delay of product or service; blow to morale and integrity of process	-Be familiar with main indicators; training; rotate responsibilities; establish reward system; include in evaluation and hiring procedures

Figure 4 (Continued)

3. Post-Award Administration Phase

The final phase of the Federal Acquisition Process is the post-award administration phase. This phase consists of four functions required of all Government contracts: start-up, quality assurance, payment and accounting, and closeout. Three other functions are completed as required during this phase. These are contract modification, termination, and claims.

a. Start-Up

This phase encompasses the task of contract administration. The broad goals of contract administration are to ensure the Government obtains the needed work on time and at the quality level called for by the contract and that the contractor receives proper compensation (Cibinic, 1995, p. 1). In order to accomplish this goal there are many functions that must be performed and associated risks to be managed. The Government seeks to ensure the contractor performs the work as required in the contract in order to satisfy the requirements in a timely manner and avoid disputes.

The development of a comprehensive, well-written contract administration plan, a well-trained workforce, effective communication with the contractor, and use of agencies trained in contract administration are the key risk treatments available in this phase. The contract administration plan must include some necessary elements. These include a brief description of the work to be performed, reporting requirements, milestones, tasks to be performed by the Government such as furnishing GFP, and identifying the CO's representatives (CORs), and CO's technical representatives (COTRs), who will monitor contractor performance and perform functions such as inspection and acceptance of items (FAP, n.d., p. 8-5).

The COR or COTR must be well-trained in evaluating contractor performance, be able to identify indicators of problems early, and communicate effectively with contractors. The CO cannot be everywhere or perform every duty necessary to ensure adequate performance of the contract and smooth performance of the acquisition. They must be able to rely on, and delegate certain duties to individuals they trust. The COR or COTR are direct representatives of the CO, with the CO's full authority in explicitly delegated duties. Thus, they must be well trained or the risk of problems such as poor quality or disputes may occur.

The contract administration plan should be in accordance with the duties specified in FAR Part 42, Contract Administration, and the process should be transferred smoothly from contract award to post-award personnel. A post-award orientation conference can ensure all parties have a clear and mutual understanding of contract

requirements, resolve immediate or potential problems, and introduce key personnel in the administration phase (FAP, n.d., p. 8-7).

Another risk during this phase concerns the prime's use of subcontractors. Since the Government only has privity of contract with the prime contractor, effective management of subcontractors is difficult. A fair amount of trust and reliance on the prime contractor is required. There are, however, several ways in which the Government can exercise control. The Government may impose a requirement for prior approval of certain subcontracts, on prime contractors (Bednar, 1995, p. 6). The Government also requires that many particular contract clauses be passed on by the prime to the subcontractor (known as flowdown clauses) in order to implement Federal policy interests (Bednar, 1995, p. 61). FAR part 44.3 describes the principle method of surveillance over a prime's subcontracting practices through a contractor purchasing system review (CPSR). This, however, only applies to negotiated contracts exceeding \$10 million over the current 12 months (FAR 44.3).

The CPSR allows the Government to review the prime's processes in selecting subcontractors. This includes review of such things as the degree of price competition obtained, the methods of obtaining cost and pricing data and ensuring currency, accuracy, and completeness, methods of evaluating subcontractor responsibility, and compliance with cost accounting standards (CAS) principles, among others (Bednar, 1995, p. 6). The CPSR is beneficial both to the Government and contractor by showing the Government that the contractor has met prescribed criteria to

safeguard Government funds, and saves the contractor time and effort in gaining consent (Beaubien, 1995, p. 39).

Flowdown clauses are taken from a prime's contract and are incorporated substantially or exactly into its subcontracts. Flowdown clauses may be used in contracts of any dollar amount. These clauses are intended to protect the Government's rights and interests and otherwise to promote Federal procurement and socioeconomic policy (Bednar, 1995, p. 6). An example is the Examination of Records Clause, 52.215-1. This clause allows the Government's comptroller general the right, for three years, to review directly pertinent prime contract records, as well as the prime's first-tier subcontractor's pertinent books and records. Thus, the risks in difficult situations can be handled by a contracting professional who is aware of the various tools and methods available.

b. Quality Assurance

The use of GFP in an acquisition can also be a prevalent liability risk in terms of its condition, suitability for use, accountability, and recovery. When the Government furnishes any of the components to be incorporated into a deliverable end item, following award of the contract, certain GFP clauses stipulate the Government is responsible if the GFP is not suitable for its intended use and is also liable if the property is not delivered on a timely basis (FAR 52.245-2(a)(2)). The FAR dedicates an entire Part (Part 45) to GFP and should be read by all contracting personnel when using GFP in a contract. Three clauses (52.245-2, -4, and -5) deal specifically with GFP in different contracts types, and should be incorporated, as required, as a key risk treatment. The Government's failure to furnish tangible GFP promised entitles the contractor to an

equitable adjustment in the contract price for its increased costs (Arnavas, 1994, p. 9-11). This could result in an adjustment in contract price, schedule adjustment, or some other form of consideration. The GFP must also be suitable for use and in good condition when given to the contractor, unless specifically stated. The use of one individual as a GFP monitor or coordinator in a contracting office or command may allow for more effective accountability and visibility of GFP.

In order to aid the CO in treating these risks, several agencies are available for support including the Defense Contract Management Command (DCMC) and the Defense Contract Audit Agency (DCAA). Due to drawdowns in personnel over the last decade, however, much of their support has been tailored to specific needs. DCMC reduced its quality assurance staff by 54 percent from fiscal year 1990 to fiscal year 1996. As a result, DCMC emphasized initiatives that are designed to promote risk management in order to better identify customer requirements, focus on critical processes, and rely on data analysis (GAO/NSIAD-98-127, 1998, p. 9). These include:

- Contractor self-oversight.
- Using Engineering Change Proposals in lieu of official contract modifications.
- Waiving inspection requirements when contractor performs at a level more than required in the contract.
- Early contract administration services (early CAS) by involving DCMC early in the process to avoid problems later; shift to problem prevention (Early CAS, 5).

During the period from fiscal year 1993 to fiscal year 1997, DCAA saw its workforce reduced by 19 percent. In response, DCAA focused its efforts on

implementing risk assessment procedures and process reengineering activities. This includes priority of oversight as follows:

- Major contractors. Contractors in this category (roughly 250) have over \$70 million each in DoD contracts. DCAA assesses them on their internal controls for such business systems as compensation, billing, labor, material, and purchasing. DCAA reviews and rates all major contractors at least once a year.
- Non-major contractors. Contractors in this category (roughly 1,750) have between \$5 and \$70 million each in DoD contracts. DCAA assesses them on an "as-needed basis." According to DCAA officials, risk factors such as evidence of budgetary control and indications of financial instability are used as criteria for determining the need for assessment.
- Small contractors. Contractors in this category (roughly 2,000) have less than \$5 million each in DoD contracts. They are assessed based on a random sample. (GAO/NSIAD-98-127, 1998, p. 9)

The Administrative Contracting Officer (ACO) is the primary individual in charge of contract administration and is responsible for more than 60 contract administration functions (FAP, n.d., p. 8-5). Some of these functions include conducting post-award orientation conferences, ensuring quality assurance requirements, monitoring small business subcontractor plans, and monitoring overall performance to help ensure timely deliveries (FAP, n.d., p. 8-6). The ACO usually resides at a DCMC activity.

c. Payment and Accounting

Other risks in this phase concern the possibility of defective pricing by the contractor, ensuring the contract is properly closed out, risks associated with possible terminations of a contract, and the filing of claims by a contractor. Defective pricing can result in higher costs to the Government, and possible termination of the contract. Risk treatments to identify and prevent defective pricing are market research, audits of the

contractor's accounting system, and review of invoices (FAP, n.d., p. 8-31). The invoices should be reviewed to ensure costs listed are allowable under the terms of FAR Part 31, as well.

Monitoring of progress payments, conducting audits of prime and subcontractor accounting and cost systems, and adjusting prices or fee by use of Forward Pricing Rate Agreements (FPRAs), and reopener clauses, are all good risks treatments to avoid problems during this phase. The CO should make use of the many agencies, such as DCAA and DCMC to assist in this effort.

d. Contract Closeout

Contract closeout is a source of significant risk because it requires the acceptance of all deliverables, payment of the contractor, and administratively closing out the contract. The final determination of overhead rates can be an especially difficult problem in cost reimbursement contracts (Valovcin, 1995, p. 49). There is also the possibility of unliquidated obligations, which are unused or unobligated funds that remain on a physically completed contract after some portion of the obligated funds have been expended, or negative unliquidated obligations which are a result of the contractor being paid too much or citing the wrong account for payment (Valovcin, 1995, p. 31). The risk treatment is a timely, comprehensive closeout procedure. The Government must also ensure that contractors are paid promptly and correctly. This has presented significant risk in many past procurements. A 1998 General Accounting Office (GAO) audit identified \$19.1 million in overpayments to contractors for the fiscal year 1997-98

(GAO/NSIAD-99-12, 1998, p. 9). Careful review of contractor invoices, and careful monitoring, can treat this risk.

e. Contract Modification

Modifications to contracts can be a cause of problems and risks of higher costs, delays, and protests. All parties should know that changes can only be directed by the CO. The mandatory Changes clause allows changes that are within the scope of the contract and require an equitable adjustment to be given to the contractor as compensation. The CO should direct modifications only when absolutely necessary, ensure they are within contract scope, and provide an equitable adjustment to the contractor.

f. Contract Termination

Terminations of a contract are a right of the Government in all contracts, but should be used only when all other options fail to correct performance, or resolve problems (Arnavas, 1994, p. 16-2). A Termination Contracting Officer (TCO) can treat risks associated with conducting a termination for default or convenience. The key treatments of avoiding terminations, especially for terminations for default, are constant communication, monitoring and evaluation of the contractor. Terminations can be costly to all parties and, if done incorrectly, can result in a loss of integrity and confidence in the process, resulting in a reduced level of competition.

g. Claims

The CO should also ensure claims from contractors are handled quickly and settled at the lowest level possible. A protest can be a significant drain on

contractors and the Government in terms of money and time lost. The CO must know the claims process and options available in order to effectively treat risks. One of the best ways is to seek a negotiated, mutually acceptable solution. A good risk treatment of a long, costly legal battle could be use of alternative dispute resolution (ADR). If both parties can agree to use of an ADR method, such as mediation, this can result in a much shorter, and less costly method of resolving differences.

The post-award administration phase ensures the requirements and processes developed in the first two phases are carried to fruition in terms of delivering the end user their required product or service and paying the contractor a fair and reasonable amount for their efforts. During this phase other individuals and agencies are available for support, such as the ACO, COTR, DCMC, and DCAA, among others. In order to effectively manage risk in the acquisition process, these individuals and agencies as well as the many tools available to the contracting professional must be tailored to each acquisition. These include the use of clauses, past performance information, proper training, and good interpersonal skills in effectively communicating with contractors when problems arise. Careful insight and constant interface with contractors are necessary to attack problems early and avoid costs, delays, protests, and possibly defaults later.

Now that the prevalent risks, possible consequences, and applicable risk treatments within the solicitation-award phase have been identified, a general model of risk within this phase can be developed.

RISK	CONSEQUENCE	TREATMENT
Start-Up		
-Developing an inadequate contract administration plan	-Contractor problems go unchecked; possible default; cost, schedule, quality problems	-Although not required in FAR, make part of CO checklist; enlist help from DCMC and DCAA
-Poor handoff of responsibilities from pre-award to post-award personnel	-Confusion over requirements, quality, and monitoring; contractor frustration	-Include handover process in acquisition plan; conduct a post-award orientation
-Lack of qualified personnel for contract management functions	-Quality control problems; possible default; cost, schedule delays	-Assign Contracting Officer's Representative (COR or COTR); seek DCMC assistance
-Failing to perform required administration functions	-Quality problems; lack of monitoring possibly causing problems to grow	-FAR part 42 outlines contract administration functions; tailor them to contract and use DCMC
-Poor suitability of GFP	-Possible delays due to repair, purchase of other equipment; higher costs	-Conduct joint inspection of GFP; use of Standard contract clauses 52.245-2 and -5;
-Loss of accountability of GFP	-May increase costs on other contracts due to unrecovered GFP; give contractors unfair advantage	-Assign an individual to monitor GFP; assure contractor knows responsibilities at beginning of contract
-Unauthorized use of GFP	-Unfair advantage to contractor on other work;	-Strict accountability of GFP; use of a GFP monitor; warn contractor
-Failure to timely deliver GFP	-Delays, equitable adjustment possible protest	-Maintain equipment, effective communication with contractor; use GFP monitor
-Prime contractor's use of non-responsible subcontractors	-Delays; possible default; poor quality of end product	-Require subcontracting plan; review of the CPSR; use of flowdown clauses such as 52.215-1 requiring examination of prime's first-tier sub records

Source: Data compiled by researcher.

Figure 5.

-Default due to subcontractor performance	-Default; higher costs to reprocure; schedule delays	-Flowdown clauses; require cost and pricing data; monthly progress reviews/reports
Quality Assurance -Failure of timely contractor delivery in a fixed-price contract (due to lack of cost and progress oversight)	-Schedule delays and cost overruns; default	-Management plan; tie progress payments to progress; contractor site inspection; COR or COTR involvement
-Contractor fails to perform within terms of the contract regarding product assurance	-Receive poor quality good; higher rework costs	-Invoke warranty; do not accept item; monitor contractor's inspection and QA process
-Failure of contractor due to impossibility of performance	-Schedule delays; higher costs; default	-Determine if delay is excusable under FAR 52.249-8
-Contractor will not complete work on time or at specified quality	-Higher costs; default	-FAR 52.242-15 (Stop Work Order); determine who is responsible; use cure notice or show cause letter; possibly modify contract if in Government's best interest; use liquidated damages clause 52.211-11
-Improper management of GFP by contract administrators	-Loss of key equipment; unfair advantage to contractor; costs	-Ensure contractor has property management system in place; assign individual to track GFP
-Contractor continues to perform poorly in terms of quality, time, costs, etc.	-Possible default; delays	-Notify contractor of past performance reporting; report to Performance Risk Assessment Group (PRAG)
Payment and Accounting -Contractor will overrun costs	-Higher costs; possible default	-Reduce scope of work; obtain best effort of contractor until funds exhausted; negotiate new cost; terminate; whatever is in Government's best interest

Figure 5 (Continued)

-Contractor submits false or duplicate invoice	-Pay duplicate costs; loss of process control	-Ensure CO approves invoices and have second party check; possibly investigate for fraud
-Contractor submits unallowable costs	-Pay higher costs; loss of process integrity	-Check costs submitted with FAR part 31; consult DCAA for audit
-Contractor debt to Government is overlooked	-Loss of payment owed	-Seek DCAA assistance via audit; liquidated damages clause; use offsets of payments owed contractor
-Contractor requests unusual progress payments to complete work	-Cost overruns; default if payment not received	-Thorough review of contractor's financial status; have contractor seek private financing first
-Market conditions change causing price fluctuations	-Costs higher or lower than expected; possible work stoppage if costs too high	-Economic price adjustments 52.207-4; enforce Forward Pricing Rate Agreements (FPRAs) and reopener clauses; equitable adjustment or offset to contractor
-Contractor defective pricing	-Higher cost to Government; possible termination	-Ensure cost or pricing data, if required, is certified; DCAA audit of contractor estimating system; should cost analysis; offsets; termination for fraud
Closeout -Final payments and settlements lag on well after contract completion	-Loss of money; possible interest payments	-Use DCMC and DCAA support; communicate with contractor; establish system of checks; assign one individual or group to be in charge of closeout
-Poor performance by contractor is not reported	-Government may receive poor quality of work from same contractor in the future	-Establish coordination procedures at closeout; notify all agencies of completion and collect feedback; final IPT

Figure 5 (Continued)

-Unliquidated/Negative Unliquidated Obligations	-Loss of appropriated funds; delays in closeout due to extensive audits	-Timely deobligation to permit reprogramming of funds; timely closeout procedure; accountability of funds
Contract Modification -Unauthorized individual instructs contract change	-Possible illegal action; protest; increased costs	-Ensure personnel know only CO has actual authority to authorize changes; sign written change order; use only COR or COTR to communicate with contractor
-Proposed change is outside scope of contract, i.e. cardinal change	-Claim or protest by contractor; possible termination	-Verify contract terms and conditions before requesting change; consult FAR clauses 52.243-1, -2, and -3
-Erroneously requiring contractor to perform contrary to correct interpretation of contract	-Constructive change resulting in claim or protest; equitable adjustment	-CO investigates and makes decision; ensure compliance with terms of contract; all communication goes thru CO
Termination -Contractor fails to perform and meet required delivery	-Delays; increased costs	-If in Government's best interest terminate for default; monitor key indicators of default risk (progress, financial, technical)
-Government's requirement is cancelled or changed substantially	-Further work by contractor will only add unnecessary costs	-Terminate for convenience is always an option if done correctly
-Government incorrectly terminates for convenience	-Protest; costs to pay work and reasonable profit if contract were completed	-Know the rules in FAR parts 49.2 and 49.3; ensure reason for default is clearly communicated, e.g. failure to perform is not failure to deliver

Figure 5 (Continued)

-Contractor disputes termination for default on grounds it has performed satisfactorily or has an excusable delay	-Legal costs; schedule delay; reprocurement costs	-Use cure notice and show cause letters first; consult DCMC for verification; use Termination Contracting Officer (TCO)
Claims -Contractor demands relief from the Government over some issue or change	-Equitable adjustment payment; legal battle; delay	-Ensure demand is written, certified (over \$100,000), and in compliance with Disputes clause; seek negotiated settlement if valid; seek use of ADR first
-Claim is initially disputed between Government and contractor and a negotiated settlement cannot be reached	-Poor communication; possible delay and lesser quality of product or service	-CO issues Contracting Officer's decision which is unilateral and binding unless contractor protests; use ADR
-Contractor seeks remedy through formal legal channels beyond CO	-Legal fees; delays; adversarial relationship	-Ensure contractor knows legal avenues and timelines; develop a comprehensive file of support; use ADR

Figure 5 (Continued)

4. Comprehensive Risk Management Model for DoD Acquisition

The general models of risk management in the three phases of the federal acquisition process can now be combined to produce a comprehensive risk management model for the contracting professional. This model includes prevalent risks that are likely to be incurred by members of the contracting community during the acquisition process. Examples of possible consequences, given the occurrence of the prevalent risks identified, can be used to ascertain their level of effect and assist in identifying applicable risk treatments. The risk treatments are not the only mitigating techniques and processes available, but give the members of the contracting community a viable option and starting

point that they can then tailor to their specific acquisition. The entire risk management model for DoD acquisition is presented in Figure 6.

RISK	CONSEQUENCE	TREATMENT
Determining Needs -User requirements improperly identified or misunderstood	-Need not satisfied; wrong product produced and purchased; resources wasted	-Clearly written ORD, use of IPTs, market research, acquisition planning
-Failure to validate need and obtain approval	-Possible cancellation of action and restart; delay	-Ensure ORD is completed; comprehensive Acquisition Plan and Strategy
-Gold plating requirements; seek silver bullet	-Requirements creep; wasted time and resources; possible delay	-Adherence to ORD requirements; IPTs to monitor progress
-Improperly forecasting requirements	-Planning for wrong number to be needed	-FAR Clauses 52.207-4 and -5; requests offeror opinion on quantities required and gives option to lease or buy equipment
Initiating the Procurement -Imprecise Purchase Request or order	-Ordering wrong product or quantity	-Communication between all parties; use of IPTs
-Inadequate funding	-Cancellation of procurement later	-Communication between all parties; use of IPTs
-Improperly committing Government funds	-Anti-deficiency Act violation	-Know Federal funding procedures, i.e. period of obligation availability, when funds expire
-Improper Market Research	-Failure to identify best solution to requirement, use of commercial items, technology	-Constant market surveillance and investigation, update data, comprehensive information base

Source: Data compiled by researcher.

Figure 6.

-Improperly applying market data	-Bad business decisions concerning whether requirement can be met, buy or lease, quantity to order, cost, etc.	-Seek help from other agencies, trade and technical associations, technical personnel, historical data
Analysis of Requirement -Use of design specifications	-Must be accurate or product/service will fail, restrictive on innovation	-Use widely accepted ISO standards, use only when absolutely required
-Use of performance specifications	-Unclear understanding of performance required between Government and contractor	-Establish threshold (minimum) and objective performance criteria
-Use of functional specifications	-Misinterpretation of need, no approach or product specified	-Prebidders conference, site walk through, draft RFP, obtain input
-Inadequate Statement of Work	-Unclear delivery, performance, inspection, and acceptance criteria, use of GFP, schedule problems	- Use IPTs; use a SOO rather than a SOW to garner best innovations; use of MIL-HDBK-245D
Sourcing -Failure to consider required sources (FAR part 8)	-Violation of law; protest by available yet unselected offerors	-Follow rules in FAR part 8 and part 19 involving small businesses and set asides
-Failure to include small businesses and partial set asides in subcontracting efforts	-Protest by available offerors; delay in award and start of work	-Use of FAR clauses 52.219-6, -7, and -14 involving total, partial, and subcontracting set asides
-Selecting a small business or set aside that will not perform properly	-Delays in production, higher costs, possible default	-Obtain information regarding performance from SBA, require certificate of competency, past performance information
-Inconsistent or arbitrary selection of price-related factors to be used in selecting best value offeror	-Protest by offerors; higher overall costs, delays	-Tell offerors in solicitation which factors will apply; ensure factors match requirements, use IPTs and market research

Figure 6 (Continued)

-Inconsistent or arbitrary selection of non-price related factors, i.e. technical factors	-Protest by offerors, poor quality and performance of product; failure to consider understanding of the requirement, poor management capability, past perf.	- Use of IPTs to evaluate offers and ensure proposal is realistic to work required; Ensure RFP matches SSP, include past performance data
-Incorrectly selecting best method of procurement	-Increased procurement costs and delays	-Know rules regarding SAP in FAR part 13; thoroughly understand the requirement; market research
Solicitation -Selecting improper solicitation	-Delays of award, higher costs, protests	-Understand requirement and its complexity; market research; use of IPTs
-Poorly communicating requirement in the solicitation	-Confusion leading to delays, poor quality of work, possible protest	-Use of draft RFPs, presolicitation conferences, IPTs; market research
-Selecting an improper contract type	-Limited cost visibility; failure to properly incentivize contractor to Government needs; cost overruns; award delays; contractor confusion; end user frustration	-Understand requirement; match to procurement method; use applicable clauses, e.g. 52.216-2 thru -5 concerning economic price adjustments following contract award; risk management analysis
-Only one reasonable source to fulfill requirement	-Leverage over performance, schedule and cost lies primarily with the contractor	-Market research, contract type selection and use of award and incentive fees to adequately share risks and monitor performance
-Specific performance areas will not be adequately monitored in a fixed-price contract	-Poor quality; cost overruns	-Consider use of award fees which allow direct evaluation of key performance areas

Figure 6 (Continued)

-Inadequate or improper contractor financing	-Contractor failure to perform, schedule delays, possible default	-Constant communication with contractor; contractor assessment review; clauses 52.232-12 thru -16; contract type selection allowing visibility of costs
-Use of GFP by contractor	-Allow unfair advantage to contractor if used in other work; costs to prepare GFP for use by contractor	-Use of Standard contract clauses 52.245-2 and -5; market research or cost benefit analysis to determine if GFP is needed
-Offeror confusion over proposal requirements	-Delays in award; increased costs; loss of confidence in process	-Effective communication; use of IPTs; prebid/preaward conference
-Inadequately publicizing solicitation	-Protest; inadequate competition	-Use a checklist; always solicit on CBD; consult FAR part 5; use bidders list
-Improperly amend or cancel solicitation requirements	-Give one contractor an advantage over another if change not communicated properly; possible protest	-Carefully consider if amendment is needed; notify all offerors; check the rules in FAR Parts 14 and 15
-Only one reasonable source to fulfill requirement	-Leverage over performance, schedule and cost lies primarily with the contractor	-Requiring subcontractor plans, performance milestones, market research, contract type selection and use of award fees to adequately share risks and monitor performance
Evaluation-Sealed Bidding -Improperly receiving a bid	-Protest by other offerors; delay of award	-Ensure Part L of solicitation is clear and followed; fair and impartial to all offerors
-Unfairly allowing offeror to change bid	-Protest by other offerors; delay of award	-Firm Bid Rule dictates; only minor informalities or irregularities and apparent clerical errors may be corrected
-Price not fair and reasonable	-Higher award cost	-Market research, other proposals, catalogs if applicable

Figure 6 (Continued)

-Awarding to technically unacceptable offeror	-High costs; possible default	-Have technical expert review proposal; ensure responsiveness and responsibility of offeror
Evaluation-Negotiation -Improperly communicating with offerors	-Technical transgression and technical leveling; protest by other offerors	-Strict adherence to guidance in RFP; communicate changes to all
-Improper technical evaluation	-Protest; delay of award	-Follow section M of solicitation
-Procedures in SSP do not follow those in RFP	-Protest; delay of award	-Ensure SSEB and SSAC are well briefed, have read all proposals, and understand evaluation criteria; conduct trial SSB; have separate individual or group review SSP and RFP; common sense check of evaluation criteria for use and ability to measure
-Price not fair and reasonable	-Higher award cost	-Market research, other proposals, catalogs if applicable; use of cost and pricing data
-Improper competitive range selection	-Protest; delay of award	-Establish consistent, verifiable criteria; include offers with a reasonable chance; based on comparison to other offers alone
-Price analysis insufficient	-Difficult to determine best offer; increased cost, time delay	-Conduct cost analysis; may require cost and pricing data as a last resort
-Poorly conducted negotiations	-Accepting an unpreferred position regarding cost, schedule or performance of contract	-Establish a clear strategy; negotiation plan; conduct detailed factfinding; research other team's characteristics; set going in tactic
-Non-competitive negotiation (sole source)	-Being taken advantage of; accepting a take it or leave it proposal	-Find other party's center of gravity; establish a few key goals and pursue them

Figure 6 (Continued)

Award		
-Improperly allowing offerors to correct mistakes	-Improvement of bid; protest by other offerors; technical transfusion and leveling	-Strict adherence to Firm Bid Rule and Section L requirements; Follow FAR parts 14.406 and 15.607; maintain process integrity
-Awarding to a non-responsible offeror	-Protest; higher cost; default	-Conduct past performance evaluation; use of PRAG data; conduct financial evaluation
-Improper debriefing of unsuccessful offerors	-Protest; delay of award	-Plan debriefing; have legal and technical support present; do not conduct point by point analysis; do not get emotional
-Protest of unsuccessful offeror	-Legal fees; delay of award	-Follow RFP exactly; review award; conduct proper debriefing; if protest is still filed ensure protester follows mandatory clause 52.233-1; know the process and follow the rules
-Fraud by offeror	-Improper award; default; delay of product or service	-Be familiar with the main indicators; consult DODIG directive; investigate all questions
-Fraud by Government employees	-Improper award; default; delay of product or service; blow to morale and integrity of process	-Be familiar with main indicators; training; rotate responsibilities; establish reward system; include in evaluation and hiring procedures
Start-Up		
-Developing an inadequate contract administration plan	-Contractor problems go unchecked; possible default; cost, schedule, quality problems	-Although not required in FAR, make part of CO checklist; enlist help from DCMC and DCAA
-Poor handoff of responsibilities from award to post-award personnel	-Confusion over requirements, quality, and monitoring; contractor frustration	-Include handover process in acquisition plan; conduct a post-award orientation

Figure 6 (Continued)

-Lack of qualified personnel for contract management functions	-Quality control problems; possible default; cost, schedule delays	-Assign Contracting Officer's Representative (COR or COTR); seek DCMC assistance
-Failing to perform required administration functions	-Quality problems; lack of monitoring possibly causing problems to grow	-FAR part 42 outlines contract administration functions; tailor them to contract and use DCMC
-Poor suitability of GFP	-Possible delays due to repair, purchase of other equipment; higher costs	-Conduct joint inspection of GFP; use of Standard contract clauses 52.245-2 and -5;
-Loss of accountability of GFP	-May increase costs on other contracts due to unrecovered GFP; give contractors unfair advantage	-Assign an individual to monitor GFP; assure contractor knows responsibilities at beginning of contract
-Unauthorized use of GFP	-Unfair advantage to contractor on other work;	-Strict accountability of GFP; use of a GFP monitor; warn contractor
-Failure to timely deliver GFP	-Delays, equitable adjustment possible protest	-Maintain equipment, effective communication with contractor; use GFP monitor
-Prime contractor's use of non-responsible subcontractors	-Delays; possible default; poor quality of end product	-Require subcontracting plan; review of the CPSR; use of flowdown clauses such as 52.215-1 requiring examination of prime's first-tier sub records
-Default due to subcontractor performance	-Default; higher costs to reprocure; schedule delays	-Flowdown clauses; require cost and pricing data; monthly progress reviews/reports
Quality Assurance -Failure of timely contractor delivery in a fixed-price contract (due to lack of cost and progress oversight)	-Schedule delays and cost overruns; default	-Management plan; tie progress payments to progress; contractor site inspection; COR or COTR involvement

Figure 6 (Continued)

-Contractor fails to perform within terms of the contract regarding product assurance	-Receive poor quality good; higher rework costs	-Invoke warranty; do not accept item; monitor contractor's inspection and QA process
-Failure of contractor due to impossibility of performance	-Schedule delays; higher costs; default	-Determine if delay is excusable under FAR 52.249-8
-Contractor will not complete work on time or at specified quality	-Higher costs; default	-FAR 52.242-15 (Stop Work Order); determine who is responsible; use cure notice or show cause letter; possibly modify contract if in Government's best interest; use liquidated damages clause 52.211-11
-Improper management of GFP by contract administrators	-Loss of key equipment; unfair advantage to contractor; costs	-Ensure contractor has property management system in place; assign individual to track GFP
-Contractor continues to perform poorly in terms of quality, time, costs, etc.	-Possible default; delays	-Notify contractor of past performance reporting; report to Performance Risk Assessment Group (PRAG)
Payment and Accounting -Contractor will overrun costs	-Higher costs; possible default	-Reduce scope of work; obtain best effort of contractor until funds exhausted; negotiate new cost; terminate; whatever is in Government's best interest
-Contractor submits false or duplicate invoice	-Pay duplicate costs; loss of process control	-Ensure CO approves invoices and have second party check; possibly investigate for fraud
-Contractor submits unallowable costs	-Pay higher costs; loss of process integrity	-Check costs submitted with FAR part 31; consult DCAA for audit

Figure 6 (Continued)

-Contractor debt to Government is overlooked	-Loss of payment owed	-Seek DCAA assistance via audit; liquidated damages clause; use offsets of payments owed contractor
-Contractor requests unusual progress payments to complete work	-Cost overruns; default if payment not received	-Thorough review of contractor's financial status; have contractor seek private financing first
-Market conditions change causing price fluctuations	-Costs higher or lower than expected; possible work stoppage if costs too high	-Economic price adjustments 52.207-4; enforce Forward Pricing Rate Agreements (FPRAs) and reopener clauses; equitable adjustment or offset to contractor
-Contractor defective pricing	-Higher cost to Government; possible termination	-Ensure cost or pricing data, if required, is certified; DCAA audit of contractor estimating system; should cost analysis; offsets; termination for fraud
Closeout -Final payments and settlements lag on well after contract completion	-Loss of money; possible interest payments	-Use DCMC and DCAA support; communicate with contractor; establish system of checks; assign one individual or group to be in charge of closeout
-Poor performance by contractor is not reported	-Government may receive poor quality of work from same contractor in the future	-Establish coordination procedures at closeout; notify all agencies of completion and collect feedback; final IPT
-Unliquidated/Negative Unliquidated Obligations	-Loss of appropriated funds; overpayment; delays in closeout due to extensive audits	-Timely deobligation to permit reprogramming of funds; timely closeout procedure; accountability of funds

Figure 6 (Continued)

Contract Modification -Unauthorized individual instructs contract change	-Possible illegal action; protest; increased costs	-Ensure personnel know only CO has actual authority to authorize changes; sign written change order; use only COR or COTR to communicate with contractor
-Proposed change is outside scope of contract, i.e. cardinal change	-Claim or protest by contractor; possible termination	-Verify contract terms and conditions before requesting change; consult FAR clauses 52.243-1, -2, and -3
-Erroneously requiring contractor to perform contrary to correct interpretation of contract	-Constructive change resulting in claim or protest; equitable adjustment	-CO investigates and makes decision; ensure compliance with terms of contract; all communication goes thru CO
Termination -Contractor fails to perform and meet required delivery	-Delays; increased costs	-If in Government's best interest terminate for default; monitor key indicators of default risk (progress, financial, technical)
-Government's requirement is cancelled or changed substantially	-Further work by contractor will only add unnecessary costs	-Terminate for convenience is always an option if done correctly
-Government incorrectly terminates for convenience	-Protest; costs to pay work and reasonable profit if contract were completed	-Know the rules in FAR parts 49.2 and 49.3; ensure reason for default is clearly communicated, e.g. failure to perform is not failure to deliver
-Contractor disputes termination for default on grounds it has performed satisfactorily or has an excusable delay	-Legal costs; schedule delay; reprocurement costs	-Use cure notice and show cause letters first; consult DCMC for verification; use Termination Contracting Officer (TCO)

Figure 6 (Continued)

Claims -Contractor demands relief from the Government over some issue or change	-Equitable adjustment payment; legal battle; delay	-Ensure demand is written, certified (over \$100,000), and in compliance with Disputes clause; seek negotiated settlement if valid; use ADR
-Claim is initially disputed between Government and contractor	-Poor communication; possible delay and lesser quality of product or service	-CO issues Contracting Officer's decision which is unilateral and binding unless contractor protests; seek use of ADR first
-Contractor seeks remedy through formal legal channels beyond CO	-Legal fees; delays; adversarial relationship	-Ensure contractor knows legal avenues and timelines; develop a comprehensive file of support; use ADR

Figure 6 (Continued)

C. MODEL ANALYSIS

A further analysis suggests four general, interrelated risks in the process:

1. The risk of not satisfying the customer requirement
2. The risk of a sustainable protest
3. The risk of non-performance
4. The risk of a litigated dispute being settled in favor of the contractor.

The ability to satisfy the customer's need is manifested in the ability to understand the requirement. Failing to understand the requirement puts the entire acquisition in jeopardy. The acquisition plan may be flawed in attempting to satisfy a different need. The mistake is perpetuated throughout the acquisition process in the form of wasted time, money, and a lack of user satisfaction. Eventually, changes may be

needed to correct a problem that should have been identified in the acquisition's early stages. If these changes are out of the scope of the contract the risk of a sustainable protest occurs.

A sustainable protest may also occur if the acquisition is not conducted fairly and consistently as prescribed in the SSP and RFP. If communications between the Government and offerors are improper, a sustainable protest is likely. This could include technical leveling or transfusion, or an improper debriefing of an unsuccessful offeror. The Government must ensure it has acted consistently and fairly throughout the acquisition, and document its actions clearly to avoid a sustainable protest that can be costly and damage the integrity of the acquisition process.

The risk of nonperformance is manifested in the possibility of default by a contractor. This may be due to poor performance by the contractor, problems caused by the Government, or a combination of the two. For instance, inadequate past performance information can lead to selection of an offeror who is not responsible, leading to cost, schedule and performance problems, and possibly default. Failure of the Government to timely deliver GFP can also lead to problems in performance by a contractor who relied on the equipment. Sometimes, a failure to communicate between the two parties can lead to a misunderstanding regarding performance, especially involving changes. The use of design specifications can also lead to problems in performance if the specifications are not correct. A dispute may arise between the Government and the contractor if neither party takes responsibility for the problem in performance.

The risk of a litigated dispute being settled in favor of the contractor can lead to higher costs, delays, and an adversarial relationship between the Government and the contractor. The Government must ensure it has; clearly communicated its requirement; included correct specifications, if needed,; notified the contractor in a timely matter if in scope changes are required; and timely delivered required equipment.

The four general risks are interrelated and may occur throughout the process. For instance, failing to satisfy the user requirement may lead to non-performance by the contractor if the Government supplies incorrect specifications or out of scope changes are required in order to produce the needed product or service. This may further lead to a litigated dispute being settled in favor of the contractor. Failing to follow the SSP, can lead to a sustainable protest by an unsuccessful offeror, and non-performance of the work required to produce the product or service.

The four general risks all have one characteristic in common; they are a result of ineffective communication. The failure to clearly articulate the customer's requirement, the inability to settle disputes early before litigation is required, and failing to follow the terms and conditions of the contract are all based on a failure of communications. The use of such risk treatments as pre-award conferences, post-award conferences, draft RFPs, mock SSBs, and the use of ADR can help to prevent a myriad of problems from escalating.

This also requires the Government to be consistent in its actions during the acquisition process from the beginning. This includes such actions as ensuring the RFP and SSP are consistent, the SSP is followed as stated, communications, if required and

allowed, are proper, and unsuccessful offerors are properly debriefed. Above all, the CO should ensure the integrity of the process is maintained through clear and consistent communication, and fair and legal actions.

D. SUMMARY

A comprehensive literature review of the 78 tasks within the three phases of the Federal Acquisition Process detailed prevalent risks, corresponding consequences, and applicable risk treatments. From this review, a model of risk in the acquisition process was developed for use by the contracting community. A further analysis of the model suggests four general, interrelated risks present throughout the process. Chapter IV garners perceptions from members of the contracting community on risk in the Federal Acquisition Process in order to gain insight into practical risk management in the process, and refine the model.

IV. CONTRACT RISK MANAGEMENT PRACTICE

A. INTRODUCTION

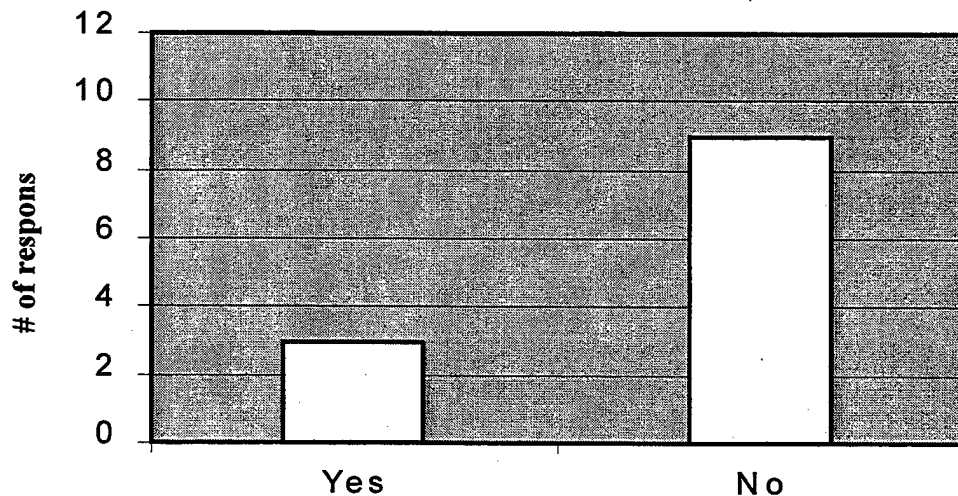
Contracting professionals encounter risks in every procurement. The Federal Acquisition Process provides a framework for the management of programs and procurements consisting of phases that are designed to reduce risk, ensure affordability, and provide adequate information for decision making (Parry, 1998). The question remains as to whether contracting professionals are aware of the many risk management tools available, and if they are using them.

In order to gather information concerning the contracting community's attitude toward risk and their knowledge of risk management, a questionnaire was developed. The objective of the questionnaire was to assess the contracting community's knowledge of risk and risk management principles, perception of risks and associated risk treatments within the Federal Acquisition Process, level of risk management training, and attitude toward risk management in light of acquisition reform. The questionnaire was sent to 31 contracting professionals at various DoD purchasing commands, contract management commands, research laboratories and depots. The questionnaire was also sent to seven other individuals with significant knowledge and experience in the acquisition and contracting arena. These included individuals located at the Logistics Management Institute, the Defense Acquisition University, the Naval Postgraduate School, the MITRE Group, and the Defense Systems Management College. A total of 12 responses were received.

B. CONTRACT RISK MANAGEMENT QUESTIONNAIRE

The questionnaire consisted of 11 questions. A few questions could be answered with short responses, but most questions attempted to elicit more in-depth analytical responses. This aids in a more detailed comparison of risks, consequences, and treatments identified in the last chapter with risks actually encountered by the contracting community. The responses to each question are presented in a graphical form for ease of comparison by the reader. A short analysis of the responses is then presented. The questions were as follows:

1. **Are you familiar with the Department of Defense Risk Management Process as outlined in the Risk Management Guide for DoD Acquisition (DSMC, 1998)?**



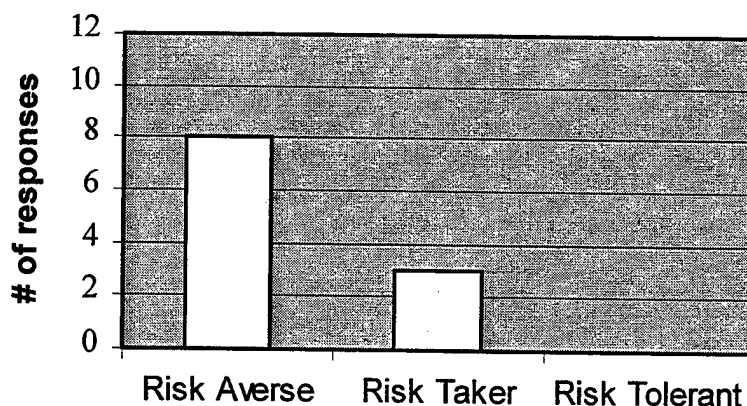
Source: Questionnaire by researcher.

Figure 7.

This question was intended to be answered either yes or no. Two of the three respondents answering yes stated that they did not have the most current version. One respondent stated, "I know of the guide but am not familiar with it. I have not studied it." Another respondent remarked, "I was surprised when I began this response that it is not included in the Acquisition Deskbook, which I use as my primary source of data in this area." The Defense Acquisition Deskbook (DAD) referred to is an automated reference tool that provides acquisition information for all DoD components across all functional disciplines (DAD, 1998). It is distributed via CD-ROM on a quarterly basis and provides access to the most current mandatory directives, discretionary guidance, practical advice, and software tools (DAD, 1998). While the DAD does include an abundance of information on risk management (a query on the DAD's search function under "risk management" finds 2,811 listings), it is true that the Risk Management Guide for DoD Acquisition is not listed. The guide can be obtained by mail from Defense Systems Management College or via the Internet (RM Guide, 1998).

It was surprising, given the level of expertise and knowledge of the respondents, that so many were unfamiliar the guide existed. The Risk Management Guide is designed to provide acquisition professionals with a reference book for dealing with system acquisition risks (RM Guide, 1998, p. 1). It describes the risk planning, assessment, and handling process within the acquisition process. While the guide is directed mainly toward Program Managers, it is very useful for all acquisition professionals, and includes a separate section concerning risk management and the contractual process.

2. How would you characterize the overall attitude of senior acquisition leaders toward risk--risk averse, risk taking, or risk tolerant?



Source: Questionnaire by researcher.

Figure 8.

This question was intended to be answered in one of the three possible responses; risk averse, risk taker, or risk tolerant. Eight of the respondents classified senior acquisition leaders as risk averse. Three respondents characterized them as risk tolerant (neutral), and one respondent did not answer the question directly. This respondent did, however, give an answer relating to what they thought senior leaders should be:

More often than not, risk taking is seen as risky business. Risks associated with weapons systems are legendary, and there is no pat formula for obviating them. What are estimated risks across the board represents a fragile structure wrapped in huge amounts of analyses. Senior acquisition leaders have to be risk takers. They have no choice for new (or sometimes modified) systems and their subsystems. Any risk taker has got to be risk tolerant. The real key is to become a risk manager.

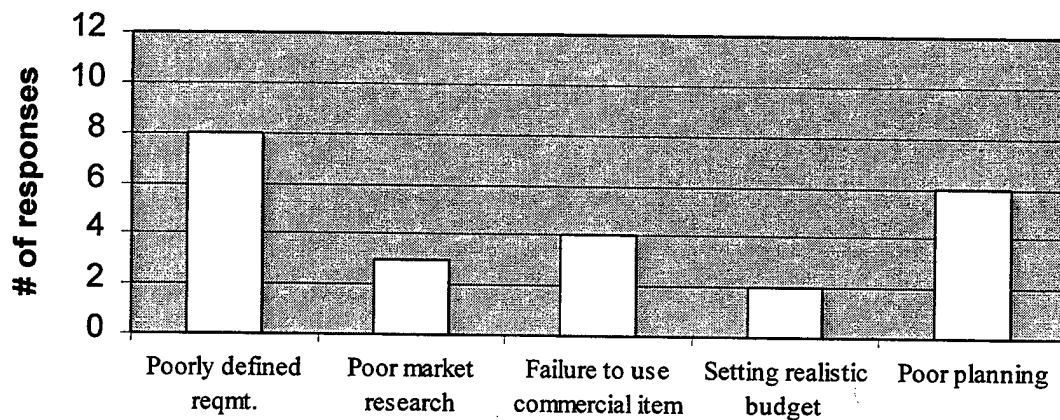
The fact that 66% of the respondents characterized senior acquisition leaders as risk averse supports the perception that for years the contracting community has labored

in an atmosphere that preferred risk aversion to careful risk management and timely decision making (Doyle, 1999, p. 42). It is especially remarkable considering many of the respondents are senior acquisition leaders themselves. One respondent stated that senior leaders in all DoD Services are risk averse, and that "the system generally drives toward that condition."

Three respondents stated views regarding mid-level leaders. One respondent said "senior leaders are risk tolerant, and mid-level leaders are very much risk averse." The other two stated the opposite; that senior leaders are risk averse, and mid-level are risk tolerant. This points toward confusion over who exactly is the cause for the generally risk averse attitude within DoD acquisition.

Questions three, four, and five gathered information on actual risks identified by the respondents in each of the three phases of the acquisition process. The risks identified by the respondents are then compared to those identified by the researcher in Chapter III.

3. What risks do you think are most prevalent in the presolicitation phase of the acquisition process (involving determination of need, initiating requirement, analysis of requirement and sourcing)?



Source: Questionnaire by researcher.

Figure 9.

The responses were very similar to those risks previously identified in Chapter III. The majority of respondents (eight) cited a "poorly defined requirement" as the biggest risk of the presolicitation phase. One respondent stated, "Nothing, absolutely nothing, beats an informed start (of the process) that represents a confident expression of need."

The other most often cited responses were the failure to use commercial products as much as possible, and poor market research. Four respondents specifically noted that the Federal Acquisition Regulation (FAR) Part 12 concerning the acquisition of commercial items needs to be emphasized to contracting personnel in order to take advantage of industry's readily available and proven products, and speed up the acquisition process.

Three others noted that poor market research is a risk. One respondent attributed this to haste by the Program Manager to get the process going, thereby overlooking important market information. They further commented, "a hastily pursued market

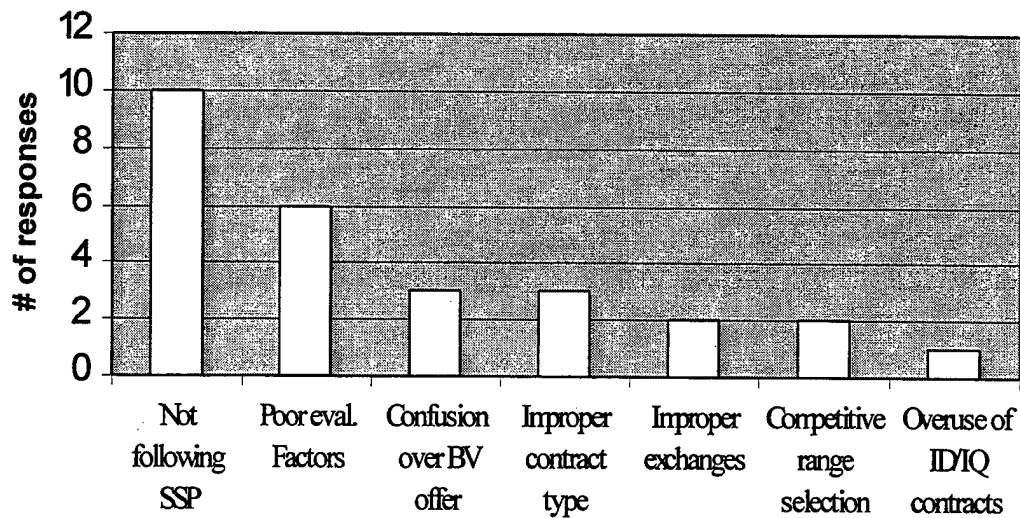
research can result in contractor problems, uninformed responses, and possibly downstream disasters and protests."

Poor planning by contracting personnel was also noted as a major risk by six of the respondents. One respondent related how "no good acquisition succeeds without a good plan and involvement of good planners." Two respondents mentioned setting a realistic budget as a risk. One stated,

The budget is a means of showing the priority of a requirement. As the budget changes, procurement needs also change. The higher the expectation of the product or service, the greater the budget oversight, and the greater the risk.

This response cited the difficulty of setting a budget for an acquisition early in the process, so as to avoid funding level problems later. The risk of setting a realistic budget is confounded by uncertainty of future costs during contract performance, making this risk even more complex.

4. What risks do you think are most prevalent in the solicitation-award phase of the acquisition process (involving solicitation, evaluation under either sealed bidding or negotiation, and award)?



Source: Questionnaire by researcher.

Figure 10.

The responses to this question were also generally similar to those risks identified in Chapter III. The risk of not following the Source Selection Plan (SSP) was listed by ten of the respondents. Six of the respondents listed a related risk of choosing and using poor evaluation factors in the process, but did not specify exactly what factors present the biggest risk. One respondent said simply, "Write the (Request for Proposal) RFP, help write the SSP, compare them, and follow the rules. This sounds easy but is screwed up quite often."

No more than three respondents were in concurrence on any of the remaining risks. Three respondents cited constraints that negatively affect the selection of a best value offeror. One of these respondents stated that risk averse senior leaders often negate best value selection, because, "they feel it is too difficult (risky) to make a clear judgement on any factor other than cost or price." Three other respondents listed

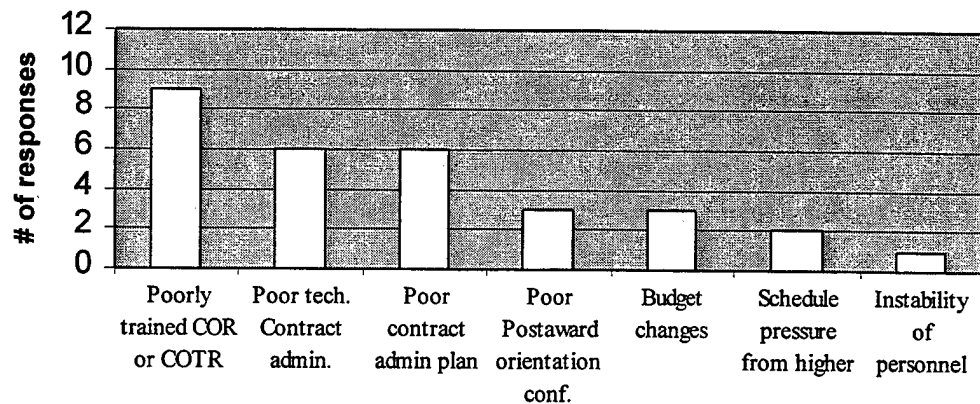
improper selection of contract type as a risk during the solicitation-award phase. One cited the risk in larger acquisitions, stating, "determining an appropriate contract type for a large-scale, system contract involves considerable risk, especially if the contract type is contemplated to utilize, for instance, incentive provisions."

Other respondents noted risks concerning proper exchanges with offerors during a competitively negotiated contract, selection of the competitive range, and risks associated with indefinite delivery/indefinite quantity (ID/IQ) contracts. Improper communications with offerors can result in a loss of integrity in the process, and be a catalyst for protests by offerors feeling they were treated unfairly. This would include such violations as technical leveling and technical transfusion.

The selection of the competitive range can also pose risks if the contracting officer (CO) eliminates offerors arbitrarily or without justification. Although, the Federal Acquisition Regulation allows the CO greater flexibility in eliminating offerors from the competitive range, the information and process used must be fair and accurate.

The risk of using ID/IQ contracts was cited by one respondent stating, "a risk is award of too many multiple award ID/IQ contract awards resulting in "empty" contracts - ultimately driving competitors away." This was a risk not previously noted in Chapter III, but does not appear to be a prevalent risk in the solicitation-award phase, or throughout the acquisition process.

5. What risks do you think are most prevalent in the post-award administration phase of the acquisition process (involving start-up, quality assurance, payment and accounting, and closeout; possibly including modification, termination, and claims)?



Source: Questionnaire by researcher.

Figure 11.

These responses were similar to those risks identified in Chapter III, with the exception of schedule pressure from higher officials, and instability of personnel. Nine respondents cited a poorly trained Contracting Officer's Representative (COR) or Contracting Officer's Technical Representative (COTR) as a risk in the post-award administration phase. One respondent stated,

Uninformed and improperly trained technical officers, i.e. COR/COTR, are walking invitations to a predictable disaster. During the performance of a supply or service, the contractor looks on the COTR as the eyes and ears of the Government. Contractors rarely see or deal directly with contracting officers.

Six respondents each stated that poor technical contract administration and a poor contract administration plan are significant sources of risk during the post-award administration phase. The risk of poor contract administration flows from a poor contract administration plan, but is influenced by many of the other risks cited. These include the inability of the COR or COTR to properly oversee the contractor, and failing to utilize a

post-award conference to clarify the duties and responsibilities of each party during contract performance. Most respondents stated that planning for contract administration is critical, because the plan dictates key responsibilities, tasks, and management functions necessary to effectively manage the contractor's performance.

Three respondents commented on the risk of a poor post-award orientation conference. One stated,

Poorly organized and hastily conducted post-award orientation conferences create an irreparable risk: un- or misinformed Government and contractor personnel who go off half-cocked will most assuredly shoot themselves in the foot.

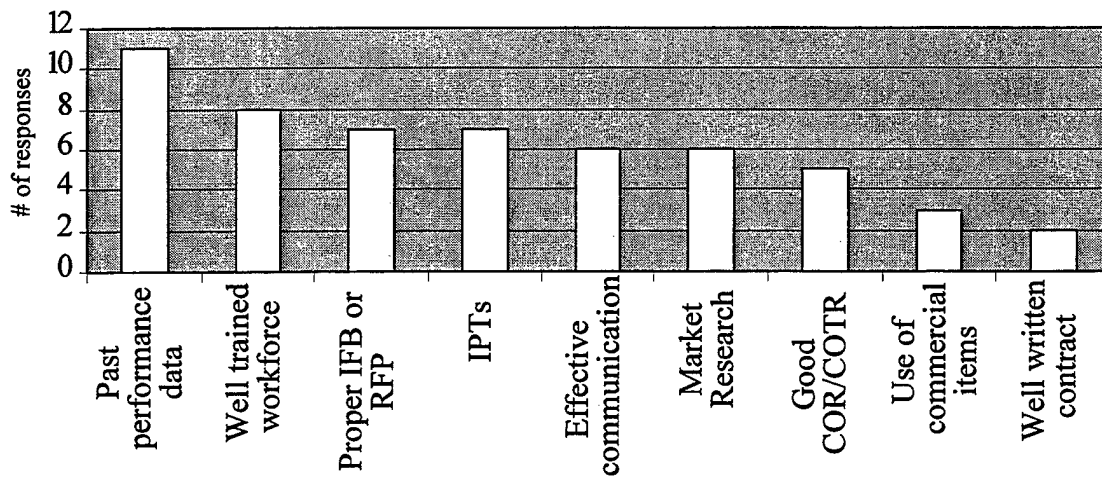
The budget risk referred to concerns the effect of changes to the funding of contract for larger programs. Many of these programs are funded over several years due to a longer performance period. One respondent stated, "Externally imposed budget changes. This must be especially true today with continuous budget reductions and the need to fund military actions overseas from the current budget." This risk is present for virtually any acquisition, but may be more prevalent in larger programs since funding appropriated from higher levels, including Congress, may be changed from what was expected over several fiscal years. It is difficult to predict exactly what funding may be added or, more importantly, cut from an acquisition. The best risk management tool may be to ensure the program stays within cost and schedule estimates, so as not to become a candidate for cancellation or funding reductions.

Two respondents noted a risk not specifically identified in Chapter III, schedule pressure from senior leaders. One respondent stated that "missing milestones (in a larger

program) is a risk no acquisition can afford, and few can survive." The other respondent stated, "micromanagement of senior officials using oversight rather than insight adds to program costs and schedule delays." The best risk management tool here, again, is striving to keep the program, or acquisition, on cost and within schedule in order to avoid increased scrutiny. In an environment already identified by the respondents as risk averse, increased scrutiny can cause delays and severely hamper contract performance.

One respondent identified another risk not identified in Chapter III, instability of Government contracting personnel. This risk may be more prevalent in larger acquisitions that take many years to complete in which different military leaders (officers) may be assigned during the lifetime of the acquisition. While this risk is present throughout all of DoD, due to military assignment rotations every few years, its effect specifically on the contracting community is difficult to discern, since this risk includes many individuals involved in acquisition including contracting personnel, program managers, and program executive officers.

6. What are some of the main risk treatments, or mitigation techniques, available to handle the risks you listed? [Example: use of past performance data or contract clauses]



Source: Questionnaire by researcher.

Figure 12.

This question was intended to elicit responses to be used for comparison to those risk treatments identified in Chapter III. The respondents identified nine different risk treatments for use throughout the acquisition process. The most common risk treatment listed was the use of past performance information. One respondent stated,

Sure, requirements for past performance are appropriate in determining the credibility of an offeror's credentials for past or similar work. But the risk here is that this had best be done evenhandedly or trouble through protest could occur.

This statement points out the need to ensure the use of past performance information is accurate and well documented. Otherwise, a protest may be filed by a potential offeror on grounds they were unfairly discriminated against due to inaccurate past performance data.

Eight of the respondents also noted the need for a well-trained workforce. Two of these eight respondents specifically cited experienced personnel who have the knowledge

and ability to recognize and work the potential problems of acquisition as a good risk treatment.

Six of the respondents stated that issuance of a clear, well-written IFB or RFP is a good risk treatment. This response was expected and identified in the previous chapter. The solicitation is the primary document the Government uses to communicate requirements to potential offerors. It can also aid in identifying risks not previously noted in the form of questions and comments from offerors. One respondent stated, "the RFP, if done properly, can surface technical and other risks and require an offeror to respond to them."

Six respondents also identified effective communication as a risk treatment. It is assumed they were referring to primarily verbal communication, since use of a well written IFB/RFP was already identified. Five respondents identified use of Integrated Product Teams (IPTs) as a risk treatment. One respondent combined the need for effective communication and the use of IPTs in their response in stating,

A communication technique I found worked well in my last program was a formal risk management program with risk items formally introduced and weekly risk management telephone meetings with the designated members of the IPT.

Another respondent related the usefulness of communicating through an effective post-award conference (orientation).

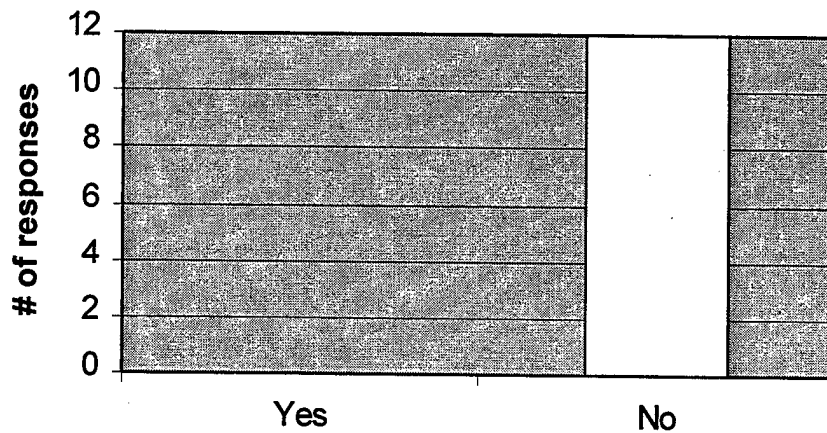
It is at this conference that QA, modifications, etc. should be squared away, including with dealing with such things as known technical, cost, and schedule risks. Nothing beats an honest airing of risks before performance commences. Get it on the table.

The use of competent, effective, and continuous market research was cited by six respondents. This response confirmed the identification of market research, in Chapter III, as a significant risk treatment. It was somewhat surprising, though, that only six of the twelve respondents listed this as a risk treatment. Market research can aid in managing risks in virtually all acquisitions by identifying current market prices for products and whether any offerors exist to satisfy a requirement. It should continue throughout the process by updating market conditions and their effect on contract costs.

Five respondents cited use of a good COR/COTR as a risk treatment. This complements the earlier identification in question number five of a poor COR/COTR as a significant risk. This response is also similar to the recommendation of having a well-trained workforce as a good risk treatment.

Three respondents also cited the use of commercial items as a risk treatment. This response was expected due to the large amount of emphasis placed on using commercial items in acquisition throughout the current contracting environment. In question three, however, four respondents identified the failure to use commercial products as a risk in the presolicitation phase, yet only three respondents identified the use of commercial items as a risk treatment. Two respondents stated that a well-written contract is a good risk treatment.

7. Do you feel contracting personnel are adequately trained in risk management?

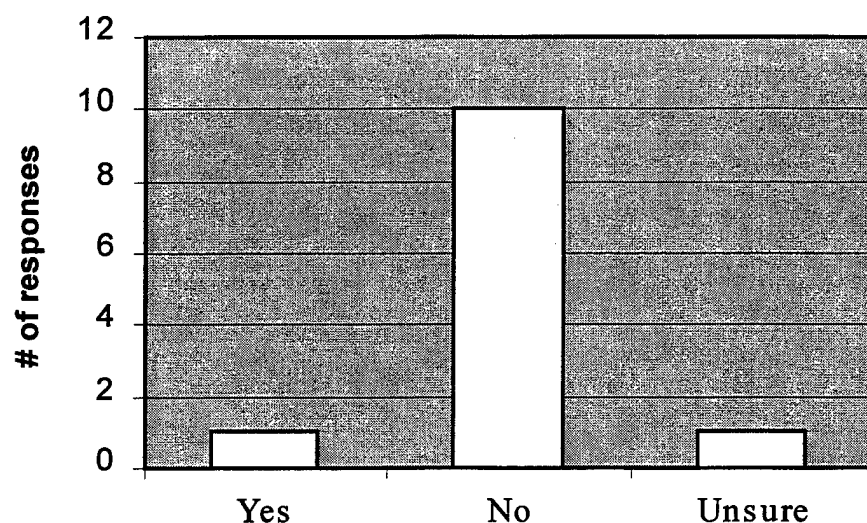


Source: Questionnaire by researcher.

Figure 13.

This question was intended to elicit a general opinion from the respondents on the level of proficiency of contracting personnel in risk management as a function of the training they received. All twelve respondents responded no to the question. One respondent stated, "they're (contracting personnel) trained in process management, procedural management, and regulatory management, but not in business management risks (e.g. financial statements, profit-and-loss concerns, reasonable sharing of risk with a contractor, the risks of using particular contract types)." The respondent believes contracting personnel are well-trained in following the steps of the acquisition process, such as writing justifications and approvals, clearances, and ensuring small business requirements are included in the solicitation, but they cannot effectively analyze and apply the process in order to make good business decisions, especially in terms of cost risk. The responses, as a whole, to this question indicate that the level of risk management training in the contracting community is lacking.

8. Do you feel risk management is done well in the acquisition process?



Source: Questionnaire by researcher.

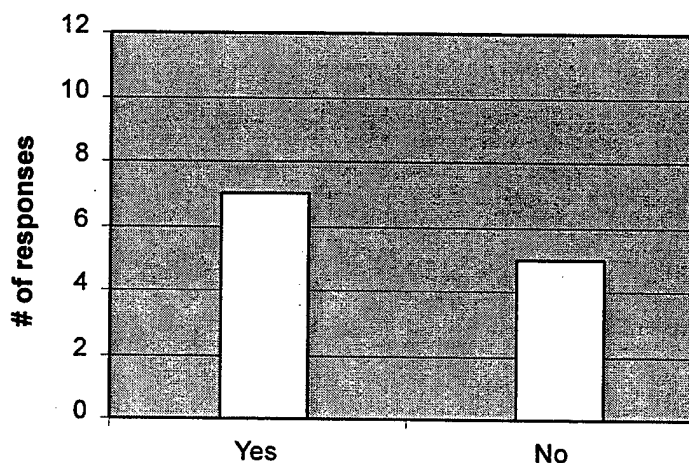
Figure 14.

This question was intended to garner perceptions of how well risk management is conducted in the acquisition process. Ten of the respondents answered no, one answered yes, and one answered unsure. One respondent stated, "Probably not and probably never will be as long as programs go astray." This answer is also somewhat surprising in the fact that these experienced, knowledgeable respondents were rating the environment of which they are a part. They may be good risk managers themselves, but do not perceive that others in the contracting community are good risk managers. Another respondent went on to say, "There has certainly been a major emphasis on it (risk management) for years. Bad experiences? Of course. Good experiences? We rarely hear of them. Business risk management needs improvement. Lots of it." There was another interesting response from one of the respondents,

Most contracting personnel do not know what they are doing when they use these tools. They don't know that they know--this is the lack of education and training again.

The response to this question indicates that risk management is not done well in the acquisition process and is in need of improvement. The response also indicates that the respondents know risk management is important and must be improved to make the acquisition process better.

9. Do you feel the risk management process is the same for every acquisition regardless of the dollar amount of the acquisition, or size of the activity conducting it?



Source: Questionnaire by researcher.

Figure 15.

The purpose of this question was to determine how the contracting community actually applies the risk management process. The question also sought to determine whether some agencies perform risk management better than others. Seven respondents

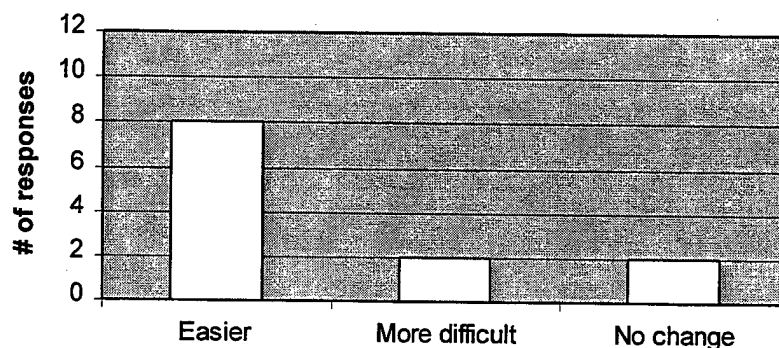
answered yes, and five answered no to this question. One of the respondents answering yes stated, "the effectiveness of the risk management program is not a function of dollars or program size. It is a function of the experience and skills of the leadership involved on both the Government and industry sides." This response alluded to employing risk management throughout the entire process the same way. Although the circumstances of each acquisition may be different, the risk management steps are employed the same.

One of the respondents who answered no stated,"

No, the risk management process is very different for larger versus smaller acquisitions. That's understandable. Smaller acquisitions don't mean the absence of concern for risk management; it reflects responsible tailoring. In the matter of activities that conduct risk management, aside from mandated requirements for weapon systems, uniformity across the board is a pipe dream.

The respondent states that the risk management process is very different for larger versus smaller acquisitions, because uniformity will never be achieved. This indicates a lack of confidence that the risk management process will be applied consistently throughout DoD because of the many different contracting commands and offices, not because the risk management process should be tailored to each acquisition. It also tends to indicate that smaller acquisitions do not warrant completion of all of the steps of the risk management process because of their smaller size.

10. Do you feel acquisition reform has made risk *taking* in the acquisition process easier, more difficult, or not changed it?



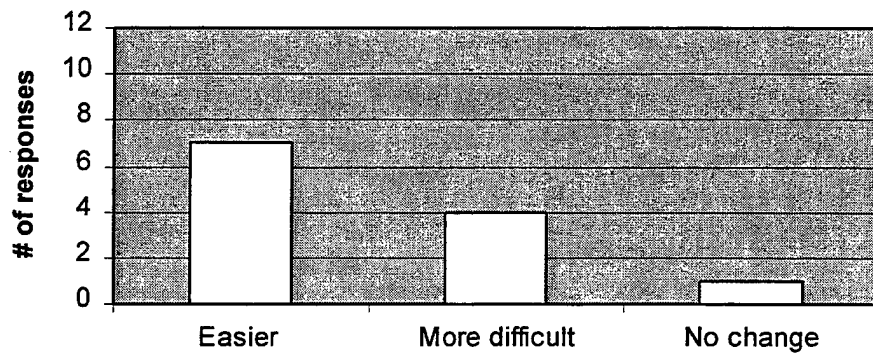
Source: Questionnaire by researcher.

Figure 16.

The purpose of this question was to determine whether acquisition reform has actually encouraged contracting personnel to take more risks. Eight respondents did feel that acquisition reform has made it easier for contracting personnel to take more risks. One respondent stated, "the ability to make a business decision that is in the best interest of the Government when there is not a FAR reference saying how one must do it, will without a doubt make it easier."

A respondent who stated acquisition reform makes it more difficult to take risks stated, "mid-level management is very risk averse, and they stand as obstacles in improving the acquisition process." This statement seems to indicate risk taking at various management levels in DoD is different. The fact that eight of the respondents indicated that acquisition reform has made it easier to take risks, suggests that contracting personnel are less encumbered today to make decisions and take actions that may have been regarded as too risky a decade ago, before the advent of acquisition reform.

11. Do you feel acquisition reform has made risk *management* in the acquisition process easier, more difficult, or not changed it?



Source: Questionnaire by researcher.

Figure 17.

This question was intended to go a step further than question number ten and determine whether acquisition reform has made the management of risk easier. Seven of the respondents did state that acquisition reform has made risk management easier. In comparing the responses of this question with those from question ten, more respondents stated that managing risks is more difficult than taking risks due to acquisition reform. It can be inferred that, although, the reduced amount of oversight and administration associated with acquisition reform has made it somewhat easier to take risks, finding ways to treat and manage them are now more difficult. This could possibly be due to the fact that contracting personnel must now tailor each acquisition, and that the "cookbook" mentality of approaching each acquisition with the same plan is no longer valid. One respondent to this question stated,

A major thrust of acquisition reform has encouraged risk taking through risk management, coupled with language that speaks to the diminution of risk aversion. All easy to say, but there are immense and protected cultures that get uneasy when they try to envision taking risks 'outside of the traditional system.' This is particularly true in the contracting arena where, for instance, contracting officers are encouraged to utilize customary commercial practices in the procurement of commercial items. Such practices vary widely, and the vulnerabilities for their use may subject the users to criticism or worse.

This response reiterates the belief in the contracting community that acquisition reform has made risk management somewhat more difficult. Although, many of the previous administrative and procedural requirements are no longer required, many contracting personnel may be finding it difficult to create ways to effectively manage acquisitions in terms of risk.

C. ANALYSIS OF DATA

The questionnaire was intended to gather information from many experienced, knowledgeable members of the contracting community on their perceptions of risk in the acquisition process and their views on the current state of risk management in contracting. The responses were used for comparison to the risks and risk treatments identified in Chapter III. As a whole, the researcher generally expected the responses. The respondents characterized the contracting community as risk averse and in need of risk management training. They also stated risk management is not done well in the acquisition process.

The general belief persists that contracting personnel are risk averse. Changing this perception is difficult. It will be especially difficult for individuals who have worked in this risk averse environment for many years. Individuals may be fearful of taking

risks, possibly due to penalties or punishment from senior leaders, should management of those risks fail. This certainly aids in creating environment in which risk management is not done well, as the respondents commented.

The respondents also believed that although recent acquisition reform has liberated contracting personnel to take more risks, risk management is now more difficult. This may be a result of the generally risk averse attitude in the contracting community, preferring not to take risks in the first place, and being unaccustomed, and unprepared, to effectively manage risks. It may also be a result of the poor level of risk management training within DoD. All of this leads to the conclusion that risk management is not done well in the acquisition process, as stated by the respondents.

The identification of risks within the acquisition process by the respondents also closely matched those risks identified by the researcher in Chapter III. A poorly defined requirement was stated as the main risk in the presolicitation phase of the acquisition process. Not following the SSP was a major risk of the solicitation-award phase, and the most noted risk overall by the respondents. This indicate that writing a good SSP is important, but following it exactly during the source selection process is even more important. Not doing so can lead to future delays, costs, and possibly protests by unsuccessful offerors feeling the source selection procedure was unfair or not properly conducted.

One risk identified during the acquisition process that was not specifically identified in Chapter III was the instability of contracting personnel. The assignment of civilians in contracting commands and offices aid in treating this risk. This is because

civilian employees, who remain much longer than military personnel at one command, can provide continuity and stability. This does not, however, solve problems associated with military officers being assigned to an office for a few years, changing program direction or acquisition policy, only to be reassigned with a new officer coming in and doing the same thing all over again. The risk of instability of Government contracting personnel may be treated through establishment of a clear acquisition plan that can be followed throughout the acquisition regardless of which individual is in charge.

One risk that was not identified specifically by the respondents was the use of Government-Furnished Property (GFP). This has been a source of significant problems and risks in recent acquisitions (Goetz, 1995, p.165). It may be that many of the respondents have not been involved with use GFP in contracts, but this seems unlikely. The fact remains that the use, disposition, and recovery of GFP in a Government contract is a significant source of risk and requires careful management to avoid problems during and following performance.

The majority of the risk treatments identified by the respondents encompassed three main themes: effective communication, a well-trained workforce, and consistent application of the requirements of the acquisition process. Effective communication and a well-trained workforce were specifically cited as risk treatments themselves. Many others, such as a clear IFB/RFP, use of a good COR/COTR, the use of IPTs, and a well-written contract are all ways of effectively communicating with contractors. The key to effective acquisition planning and contract management involves effective communication among all parties. It includes such tasks as understanding the requirement,

publishing the solicitation, ensuring all Government personnel understand the selection process, conducting a post-award orientation conference, and communicating with the contractor during contract administration. All of these steps require effective communication.

A well-trained workforce is also integral in effectively treating risks in the acquisition process. This may also include risk management training, the use of IPTs to better understand the duties and responsibilities of other parties, effective training and preparation of CORs/COTRs, and training in the preparation of acquisition plans and contract management plans.

It is also important that the conduct of the acquisition process is done consistently and impartially so as to maintain the integrity of the process. If, for instance, the source selection procedure is conducted unfairly or arbitrarily, whether intended or unintended, a loss of confidence in the process by Government and industry personnel will eventually hurt competition.

There were also some surprises from the respondents regarding their suggestions of risk treatments. Although, eight of the respondents cited a poorly understood requirement as a prevalent risk in the presolicitation phase, none of the respondents cited understanding the requirement as a risk treatment. This indicates that understanding the requirement early in the process may be taken for granted or overlooked. None of the respondents cited the use of draft RFPs as a risk treatment. Draft RFPs can be a very effective way of ensuring that the Government's requirement is clearly stated and understood, and for gathering recommendations for improvements to the solicitation.

The response to the first question was also surprising. The first question was meant simply to ascertain the level of familiarity the respondents possessed regarding risk management in Department of Defense acquisition. A majority of respondents, considered experienced professionals in the acquisition field, were not at all familiar with the guide. This guide specifically lays out the risk management process and presents many useful examples for developing risk management plans and properly analyzing requirements in terms of risk. This omission of a key acquisition risk management document, and risk treatment tool, may lead to ineffective planning and mismanagement.

The respondents also indicated that the application of the risk management process is inconsistent within various contracting commands and across varying acquisition dollar amounts. This raises further concern that risk management may not be done well in the acquisition process. If each agency, or individual applies different risk management criteria, many important steps may be overlooked. Standardization is not required, but each step of the risk management process should be considered in all acquisitions to ensure no risk is overlooked.

D. SUMMARY

This chapter presented and analyzed the data obtained from a questionnaire of knowledgeable, experienced contracting personnel. Some questions were used to ascertain the level of familiarity the respondents had concerning the risk management process. A few questions sought to gain information concerning risks and risk treatments cited by the respondents for comparison to those identified in Chapter III. Other questions measured the respondent's feelings about the current level of risk management

training, application of the risk management process, and its effects from acquisition reform. Chapter V provides conclusions, recommendations, answers to research questions, and recommendations for further research.

V. CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

The Federal Acquisition Process is indeed laden with risks. From initial identification of the requirement to final contract closeout, there are a myriad of tasks and functions to be completed by the contracting professional. In order to manage the risks in each phase of the acquisition process, one must be able to clearly identify them. This requires a keen understanding of the nature of the risk, its consequences, and effective treatment methods. The contracting professional skilled and knowledgeable in the risk management process for DoD acquisition will aid in the procurement of goods and services that work better, cost less, are quickly received by the end user, and present the overall best value to the Government.

Effective risk management in the acquisition process is in consonance with the Guiding Principles of the Federal Acquisition System (System). The Federal Acquisition Regulation (FAR) clearly presents the mandate of the system concerning risk. It states, "to achieve efficient operations, the System must shift its focus from 'risk avoidance' to one of 'risk management'. (FAR, Part 1-2) Even further, the first of the ten Guiding Principles of Acquisition Reform is "Empower people to manage--not avoid risk." This is done by (1) delegating authority and rewarding results, (2) encouraging innovation by issuing guidance not rules, (3) training in a multifunctional environment, and (4) committing to quality through customer focus and continuous improvement (Acquisition Reform).

While acknowledging that the cost to the taxpayer of attempting to eliminate all risk is prohibitive, the contracting professional must make use of the many risk management resources and tools available, tailor them to each acquisition, and establish an effective management process. It appears, however, that risk management in DoD acquisition is not done well. The responses to the questionnaire by current acquisition and contracting professionals point to an acquisition community largely risk averse and unaware of key risk management tools.

B. CONCLUSIONS

The scope of this research has led to several conclusions concerning risk and the risk management process in acquisition as it is currently conducted.

Conclusion 1. Senior leaders in the contracting community are still largely risk averse which may lead to poor risk management in the acquisition process.

The responses from question number two of the questionnaire confirm that the contracting community is stifled by senior leaders who are risk averse. This leads to less initiative on the part of contracting professionals and an overall reduced level of effective risk management, for fear of making a mistake. The decision is often to not take risks. By waiting until every last piece of information is available before making a decision, the decision is avoided, not made. It also appears that the risk averse attitude has pervaded other management levels of the contracting community. Some respondents felt that mid-level managers are to blame for the current situation. This environment continues to impede the effective implementation of risk management in acquisition.

Conclusion 2. The risk management process is applied inconsistently throughout the contracting community.

Many respondents to the questionnaire stated that the application of the risk management process is different depending on the size of the acquisition. Respondents mentioned that smaller acquisitions required a rather cursory approach to risk management, while the larger acquisitions required a more detailed, comprehensive management approach. This may be more of a function of the expected amount of oversight associated with larger acquisitions of a higher dollar value. Larger acquisitions may include a more comprehensive risk management approach since there are definitive requirements and milestones that are reviewed by senior executives in the acquisition process, but should not imply that smaller acquisitions, not requiring as many reviews, are not at all risky. Finding an efficient balance of time and cost in order to identify risks in acquisition may be difficult, but a consistent application of the risk management process should be pursued. This will aid in avoiding costly problems later, in even the smallest acquisitions.

Conclusion 3. Contracting personnel are not adequately trained in risk management.

It is evident from responses to question number seven of the questionnaire that risk management training in the contracting community is lacking. This is evident in several factors. First, many individuals are unaware of the Risk Management Guide for DoD Acquisition published by the Defense Systems Management College (DSMC) which could be used as a source of training, at least informally, at many contracting

commands. Second, the inconsistent application of the risk management process throughout the contracting community may be a direct result of inadequate training. All of the steps of the risk management process may not be well understood or emphasized when conducting smaller acquisitions, or within smaller sized contracting commands, due to a reduced number of properly trained personnel. As a result, steps are omitted, and adequate risk treatments overlooked, leading to subsequent problems during contract performance. The respondents cited a well-trained workforce as an important risk treatment in the acquisition process. This includes effective risk management training.

Conclusion 4. Failing to understand the requirement and not following the Source Selection Plan are the two most prevalent risks in the acquisition process.

The acquisition process begins with a requirement to satisfy the need of an end user. This requirement must be well documented and well understood by both the Government and potential offerors. If not, the entire acquisition is in jeopardy of higher costs, schedule delays, poor quality, and inadequate performance due to confusion over subsequent contract modifications to correct deficiencies. Failing to understand the requirement is perpetuated throughout the acquisition in the form of an incorrect solicitation, poor selection of evaluation factors, possibly choosing the wrong offeror, and problems during contract administration over exactly what is required.

The Source Selection Plan (SSP) is the means the Government uses to choose the offer presenting the best overall value. It encompasses evaluation factors that will aid in distinguishing the best offer. It is imperative that Government personnel follow the steps of the SSP in order to choose the best offer fairly and impartially. If not, unsuccessful

offerors may protest resulting in delays and possibly higher costs. Also, if the evaluation factors are not applied correctly, the wrong offeror may be chosen, resulting in a less than best value performance, leading to higher costs, and possibly contractor default.

Conclusion 5. Effective communication, a well-trained workforce, and the use of past performance information are the main risk treatments in the acquisition process.

Many of the responses to the questionnaire cited effective communication as a good risk treatment. This includes both verbal and written communication. An effective contracting professional must be able to articulate the needs of the end user into a proper solicitation, and ultimately, contract. A comprehensive acquisition plan, source selection plan, and contract administration plan will also help ensure a good acquisition process. A capable contracting professional must also be able to effectively communicate the Government's needs and requirements verbally as a CO, Contracting Officer's Representative (COR), or Contracting Officer's Technical Representative (COTR). Poor or ineffective communication can lead to many problems. These include technical leveling or technical transfusion during negotiations, which are illegal, and improper debriefings of unsuccessful offerors, which could lead to protests.

A well-trained workforce in risk management can also ensure an acquisition process with fewer problems. By using the risk management process correctly, effective management control and risk treatments can be established. This includes properly training and using a COR/COTR who is able to identify and manage risks during contract performance. The CO cannot be everywhere or involved in every action of the

acquisition, and must rely on competent, well-trained individuals to perform key management functions.

Past performance information is a key risk treatment that can mitigate the risk of choosing a non-responsible offeror during the source selection process. Perhaps no other factor can predict how well a contractor will perform, than how they performed on previous Government contracts. It is important, though, that any past performance information used is accurate and impartial, or else the potential contractor may protest. It is also important for contracting personnel to update past performance information on current contracts, to improve future acquisitions.

Conclusion 6. Acquisition reform has made it easier for the contracting community to take risks, but has made it somewhat more difficult to manage risks.

Acquisition reform has allowed the contracting community to take more risks in the acquisition process, by reducing the amount of rules, regulations, and administrative burdens of the past. This has allowed a wider range of options and innovations for satisfying Government needs in the process. Acquisition reform has also made it more difficult to devise controls and risk treatments to effectively manage risks in the process. This may be even more difficult in an environment characterized as risk averse due to increased oversight and a negative attitude toward risk taking in the first place. It may be a daunting task for the contracting community to embrace the tenets of acquisition reform and actually apply them to a more effective risk management process.

C. RECOMMENDATIONS

Based on the conclusions of this research, the following recommendations are made.

Recommendation 1. A risk management training program, whether formal or informal, should be implemented across the contracting community.

The level of adequate risk management training in the contracting community is lacking. Several courses are available for formal risk management training, which include learning and using the risk management process through practical application under the guidance of a trained instructor. Several agencies, such as the Air Force Management College (AFMC) offer courses that are listed on the Defense Acquisition Deskbook (DAD). Other organizations such as the National Contract Management Association (NCMA) and the Educational Services Institute (ESI) offer risk management training. Many universities and private companies also offer formal courses on risk management. Formal training would be a good way to ensure all members of the contracting community understand the entire process, regardless of their command or location. This may greatly improve the entire acquisition process.

There is also a plethora of information on the risk management process in libraries and throughout the internet. Another informative resource concerning risk in acquisition is a series of publications by the Queensland, Australia state procurement office. They were a primary reference used by the researcher for developing the general risk model. They are available via the internet.

The consummate contracting professional is an individual that seeks information for self-improvement to make themselves, and the acquisition process, better. Training should be stressed and encouraged by senior leaders at all commands to ensure contracting personnel have the tools and knowledge necessary to conduct effect risk management. At the least, all contracting personnel should review the Risk Management Guide for DoD Acquisition.

Recommendation 2. The risk management process must be applied consistently throughout the contracting community.

The risk management process must begin with the acquisition process during definition of the requirement. It must be performed extensively at the start of the acquisition and then monitored throughout the acquisition's life. The focus now is usually on the total risk of the completed acquisition rather than on the components of the total risk that may lead to problems. Risks are not clearly identified and are, rather, treated as they appear. This can lead to an inefficient utilization of resources.

A more adequate approach would be characterized by a pronounced peak of risk assessment activity at the very beginning of the acquisition, the presolicitation phase, and diminishing to a more sedate pace in the later phases. This approach puts the main focus not only on identifying weak spots in the system, but also on the ability to compare the risks of alternative approaches. It is also important that the risk management process is approached uniformly for all acquisitions. The process can be tailored to specific acquisition needs, but consideration of all steps early will ensure no risks and risk treatments are overlooked.

Recommendation 3. Leaders at all levels within the contracting community should encourage the taking of prudent risks in acquisition.

In order for the risk management process to be readily accepted and used, and for it to become a routine practice for all acquisitions, leaders must encourage their subordinates to take prudent risks. The support of senior leaders in taking risks and devising effective risk management control measures and risk treatments may allow contracting professionals to improve the overall acquisition process. This may require senior leaders to evolve from their risk averse stereotype, and accept the fact that mistakes will happen along the way.

This cycle of "safety first" can be eradicated through effective coaching, decision support, and active efforts to challenge the old culture by training Contracting Officers (COs) in the philosophies and skills of effective decision making. As Gregory Doyle, a procurement analyst in the Acquisition Reform Directorate stated, "acquisition leaders must demonstrate their commitment by rewarding justifiable risk, no matter the outcome (CM, 1999, p. 42).

Recommendation 4. The use of market research should be strongly encouraged as a key risk treatment throughout the acquisition process.

Market research was identified as a key risk treatment by the researcher in Chapter III and was confirmed as a key risk treatment by the respondents to the questionnaire. Market research shapes the acquisition by treating risks associated with the ability to define the requirement, determine whether potential offerors exist, shape the evaluation factors to be used in source selection, and refine the terms and conditions of

the contract. Market research is an integral part of the acquisition of commercial items, which is currently the Government's preference under the Federal Acquisition Streamlining Act of 1994 (FAR, Part 12.000).

Once the end user's need is verified, and the requirement is defined, market research is the most effective means of determining the availability of a product or service in order to satisfy the Government's requirement. Market research later in the acquisition can aid in updating costs and improving quality. This could be due to changes in market conditions such as state-of-the-art technology. Only six of the twelve respondents to the questionnaire, however, listed risk management as a key risk treatment. This possibly would indicate market research is either not emphasized, or taken for granted. As the Government increasingly looks to industry to satisfy their requirements through the use of commercial-off-the-shelf (COTS) items, market research will assist in this effort. The contracting community should emphasize the use of market research.

Recommendation 5. The contracting community must be very knowledgeable of the FAR and its risk treatment tools, especially FAR Part 52-- clauses.

The FAR is the primary guidance for acquisition decisions made by members of the contracting community. It includes the steps for conducting virtually any acquisition and identification of risks in the process. Also included are many applicable risk treatments, such as market research, requirements for a proper solicitation, and clauses designed to protect the Government's interests. Some clauses are mandatory and others

are to be used as required. Contracting professionals should be very familiar with all clauses and specifically know when certain acquisitions merit the inclusion of certain clauses. Beyond simply the use of clauses, the contracting community should be conversant with all aspects and requirements in the FAR, especially concerning the acquisition of commercial items, source selection procedures, and compliance with Government mandated socioeconomic programs. A careful read of the FAR can be a significant step toward effective risk management. The consummate contracting professional should not only know the FAR, but know how to tailor it to meet each requirement while minimizing risks in the process.

Recommendation 6. The risk management process requires coordination between Government and contractor activities.

The risk management process includes the coordination of the CO, DCMC, DCAA, ACO, and the contractor. It is the CO's responsibility to ensure all agencies and their inputs are used to effectively identify, analyze, and manage risks in the acquisition process. The contractor also has a responsibility to manage risks, especially during contract performance. With a decreased amount of Government resources and personnel available, due to recent drawdowns and budget reductions, a greater emphasis must be placed on contractors to be a part of the risk management process. This is separate and distinct from the contractor simply accepting a level of risk through negotiation of a contract type. It means being more active early in the process and throughout the acquisition to aid the Government in refining requirements, solicitations, plans and management controls.

Recommendation 7. Contracting professionals must be effective communicators.

Effective communication, both written and verbal, is a significant risk treatment. The acquisition process rests on a foundation of clear and open communication. This can prevent protests, and problems related to confusion over exact contract requirements between the Government and contractor. Effective communication encompasses the end user communicating their need to the acquisition community, and the acquisition community, specifically contracting professionals, communicating that need to industry. The contracting professional is at the center of this process. Clear, written communication in the form of a well-documented requirement, solicitation, evaluation factors, source selection plan, contract, and contract administration plan, is a key responsibility of the contracting professional. The contracting professional must also be able to convey the Government's position through effective verbal communication during negotiations, debriefings to unsuccessful offerors, and in contact with the contractor during contract performance. Effective communication skills are a necessity in reducing risk in the acquisition process.

D. SUMMARY AND REVIEW OF RESEARCH QUESTIONS

Primary Research Question: What model or framework can be developed and used to clarify, analyze, and manage prevalent risks associated with Federal contracting?

The model as shown in Figure 6 was developed in order to clarify prevalent risks associated with Federal contracting and present applicable risk treatments. While it may

be impossible to identify each risk in the contracting process due to the myriad of risk opportunities and the prohibitive cost of doing so, the model presented in Figure 6 should serve as a primary aid in managing risk in acquisition. The model details prevalent risks within each phase and function of the Federal Acquisition Process, associated consequences of those risks, and practical risk treatments. The development of the model was done through an extensive literature review and research of contracting and risk management documents, as well as a questionnaire of knowledgeable, experienced contracting professionals.

Subsidiary Research Question 1: What is risk, and how can risk management be defined in terms of identification, assessment, and mitigation techniques available?

Risk is a difficult term to define. Risk is a product of the probability of an event occurring and the consequence of it occurring. In order to effectively manage risks, the nature of risk must be understood. Risks have five primary characteristics; they are situational, time-based, interdependent, magnitude dependent, and value based. These characteristics mean that risks are a function of the situation in which they are encountered and the time available to deal with them. Since no risk is isolated within the acquisition process, risks affect one another in their occurrence and treatment. Risks are also classified according the magnitude of possible loss. The values of an organization and individual also play a large part in risk identification and the risk management process.

Within the Department of Defense (DoD) acquisition process, a risk management process is already established. It consists of the basic steps of identifying prevalent risks, assessing their probability and impact, analyzing their effect on the acquisition, and devising mitigation techniques, or treatments, to handle the risks. The Risk Management Guide for DoD Acquisition is a publication that serves as the primary guiding document for contracting professionals conducting the risk management process. The risk management process consists of the following steps:

- Risk planning
- Risk assessment
 - Risk identification
 - Risk analysis
- Risk handling
- Risk monitoring

The entire risk management process is one that should be applied consistently throughout the acquisition process, and tailored following identification of all prevalent risks and treatments. The contracting community should be well-versed in the risk management process.

Subsidiary Research Question 2: How does the Federal Acquisition Process operate and how can risk management be modeled and applied to the contracting process?

The Federal Acquisition Process is a three-phased approach used by the Government to acquire needed goods and services. It consists of a pre-solicitation phase

(also called pre-award and procurement planning phase), a solicitation-award phase (also called contract formation phase), and a post-award administration phase (also called contract administration phase). These three phases are further broken into 78 specific functions and responsibilities of contracting personnel.

The goals of the acquisition process are to satisfy customer requirements through marketplaces for supplies and services, and meet expectations in terms of quality, timeliness, and cost while minimizing business and technical risks. It also seeks to accomplish socioeconomic objectives, maximize competition, and maintain process integrity.

Risk management can be applied to the process by analyzing each phase and identifying prevalent risks. Then, the risk management process can be followed in order to understand the causes of the risk and devise ways on how to best treat them. By understanding both the acquisition process and the risk management process, the contracting professional can effectively manage the acquisition ensuring a minimal level of problems.

Subsidiary Research Question 3: What risks are most prevalent across the spectrum of the Federal Acquisition Process?

The most prevalent risks in the acquisition process were developed through a combination of an extensive literature review (reference Chapter III), and responses from a questionnaire (reference Chapter IV). The most prevalent risks identified in the presolicitation phase of the process were:

- Failing to understand and define the requirement.
- Conducting poor or inadequate market research.
- Failure to make use of commercial items.
- Poor acquisition planning.
- Failure to obtain required funding and set a realistic budget.

The second phase of the acquisition process, the solicitation-award phase presented the following prevalent risks:

- Not following the Source Selection Plan (SSP).
- Selection and use of poor evaluation factors.
- Confusion over selection of the best value offer.
- Selection of an improper contract type.
- Improper exchanges and communication with offerors.
- Improper competitive range selection.
- Use of Government Furnished Property (GFP).

The third phase of the acquisition process, the post-award administration phase presented the following prevalent risks:

- Poorly trained Contracting Officer's Representative (COR) or Contracting Officer's Technical Representative (COTR).
- Poor technical contract administration.
- Poor contract administration plan.
- Poor postaward orientation conference.
- Budget and funding changes.

- Schedule pressure from higher level management.
- Instability of Government contracting personnel.

Many of the risks in the process revolve around a few key risk issues. These are risks associated with inadequate training of contracting personnel, ineffective verbal and written communication, and inconsistent performance within the process. It is imperative that the integrity of the process is maintained in order to preserve the confidence of the Government and contractor.

Subsidiary Research Question 4: How do contracting professionals manage risk in the conduct of their professional duties?

Responses were obtained from many experienced and knowledgeable professionals in the contracting community citing their recommendations of key risk treatments in the acquisition process. The following were the risk treatments cited:

- Past performance data.
- Well-trained workforce.
- Proper Invitation for Bid (IFB) or Request for Proposal (RFP).
- Use of Integrated Product Teams (IPTs).
- Effective communication.
- Market research.
- A good COR or COTR.
- Use of commercial items.
- A well-written contract.
- Use of draft RFPs.

All of the risk treatments identified by the respondents were identified by the researcher in Chapter III. The risk treatments identified above also centered on three key themes, effective communication, a well-trained workforce, and consistent application of the process, thereby maintaining the integrity of the process.

Subsidiary Research Question 5: How can contracting risk management be improved through the use of a model?

Each phase, function, and task of the acquisition process is laden with risks. The model in Figure 6 was developed as a compilation of risks, consequences, and treatments within each phase of the acquisition process. From this model, the union of the acquisition process and risk management process will allow for an effective identification and treatment of many of the prevalent risks in the acquisition process. The contracting professional can then refer to the model and tailor its recommendations to meet their individual needs.

While there is a plethora of information and references available to aid the contracting community in performance of their duties, a general model of risk management in the Federal Acquisition Process can be a valuable tool. The model will serve not as an all-inclusive, comprehensive risk management reference, but rather as a document to provoke thought on risk in the acquisition process and how to best manage the prevalent risks. The overall affect of this model would be a streamlined risk management process for DoD acquisition that aids the contracting professional in their daily tasks.

E. AREAS OF FURTHER RESEARCH

Suggested topics for further research include:

1. How is risk management in the acquisition process conducted in small versus large contracting commands and offices? This would be a good topic of analysis to see how consistently the risk management process is applied at different contracting commands and offices. This may allow for a further identification of prevalent risks across varying commands and even, services. It may also allow for development of a more specialized risk management model for different sized contracting organizations or different types of acquisitions.

2. Can a quantitative model of risk management in acquisition be developed? This research would include actually apply a quantitative assessment to the risk management model in terms of rating the probability of certain risks occurring and their priority. This could lead to a more definitive risk management model for specific types of acquisition, and for a more effective application of resources to manage risks of a higher probability and priority.

3. How is the risk management process applied more comprehensively within the presolicitation phase, solicitation-award phase, or post-award administration phase? This would involve going more deeply into a specific phase of the process in order to identify and analyze prevalent risks, given the summary level presented in this research. This would allow an even greater understanding of risk within each phase.

4. Conducting an analysis to test the efficacy of the recommendations in this research. This would allow for a practical evaluation and measurement of each

recommendation to see how well they can improve the risk management process in acquisition, especially concerning training of the workforce, use of market research, and the use of contract clauses.

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